Friends of the Earth Scotland representation to the Scottish Government Energy Consents Unit regarding the Peterhead Low Carbon CCGT Power Station Project

7th July 2025

About us

Friends of the Earth Scotland exists to win campaigns for transformative solutions to the root causes of environmental problems. We campaign for an end to the climate crisis, for the flourishing of the Scottish environment, and for a democratic Scotland which cherishes and protects the natural world we are part of. We work for an economy oriented towards the needs of communities, ecosystems and the plant and support people and the planet. We are Scotland's leading environmental campaigning organisation. An independent Scottish charity with a network of thousands of supporters and active local groups across Scotland. We are also part of the largest grassroots environmental network in the world, uniting over 2 million supporters, 75 national member groups, and some 5,000 local activist groups – covering six continents.

Summary

Friends of the Earth Scotland is calling on Scottish Ministers to reject the application by SSE Thermal Generation (Scotland) Ltd for the Peterhead Low Carbon CCGT Project (ECU00003433).

The proposed benefits of the Peterhead CCGT station are far outweighed by its significant **risk to achieving Scotland's legally enshrined 2045 net-zero target and carbon budgets.**

We submit this representation in addition to our previous representation, dated 12th May 2022 (publication date 17 Feb 2023, Representation: 002,004 objection) that outlined our objection to the above-named proposed development.

Having now considered the Additional Information Report 2025, Friends of the Earth Scotland outlines the following concerns about the EIA and approval of the project:

- High risk of failure to meet Scotland's legal climate target of net-zero by 2045
- High impact on other sectors of the Scottish economy, requiring more rapid decarbonisation to allow for emissions from this project
- Lack of plan from the Scottish Government to balance emissions beyond 2045
- Risk to Scotland's international obligations under the UNFCCC Paris Agreement
- Underestimation of the upstream emissions impact from the project
- Unverified claims about the efficacy of the capture plant, providing overly optimistic capture rates

- Dependence on third party applications for transportation and storage of captured carbon, which cannot be cross referenced
- Concerns over pipeline safety

Introduction

The science is clear; fossil fuels are driving the climate crisis and governments must rapidly and fairly phase out fossil fuels to prevent further irreversible human and planetary harm and suffering. The devastating effects of the climate crisis are accelerating around the world. This year, Scotland faced its driest spring for over 60 years with unprecedented wildfires and drought.

Since the initial planning application for this project was submitted in 2022, each subsequent year has been the warmest year on record. 2024 reached 1.6°C above pre-industrial average levels [1]. The climate crisis requires urgent action, and the Scottish Government have obligations under both international and domestic legislation which approving this project would risk.

International climate law

The Scottish Government has obligations under international climate law, primarily under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement. The Paris Agreement[2], ratified in April 2016, commits nations to "holding" the increase in global average temperature to "well below 2°C" and "pursuing efforts" to limit warming to 1.5°C above pre-industrial levels, "recognizing that this would significantly reduce the risks and impacts of climate change". The Paris treaty, reiterating states' obligations under the UN Framework Convention on Climate Change, states that "the Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances." This means that nations with greater historic responsibility for climate change, and greater financial and technological capabilities for implementing the transition - such as Scotland - must act first and fastest. The UK is the 8th largest historical emitter in the world[3] is one of the nations with

[1] https://wmo.int/news/media-centre/wmo-confirms-2024-warmest-year-record-about-155degc-above-pre-industrial-level

[2] Paris Agreement
https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf

[3] https://www.carbonbrief.org/analysis-which-countries-are-historically-responsible-for-climate-change/

the greatest capacity to invest in a just transition and the lowest dependence on fossil fuel revenues[4].

The world is not on track to meet the crucial 1.5°C climate target enshrined in the Paris Agreement. The current trajectory, rooted in insufficient emission reduction policies and a lack of demonstrable climate action is expected to lead to a temperature increase of 2.6°C - 3.1°C[5] by the end of the century. The 2024 UN Emissions Gap report unequivocally states this, *"would bring debilitating impacts to people, planet and economies".* It is clear that Scotland has obligations under the UNFCCC Paris Agreement to reduce emissions rapidly, and more rapidly than the global average.

If rapid delivery of climate action does not happen urgently then the Paris Agreement target of 1.5°C will be missed within a few years and the ability to limit climate heating to even the 2°C target will be in increasing danger. Those nations with the greatest responsibility and capabilities have a legal and moral responsibility to rapidly phase out fossil fuel production and use. The Scottish Government would be failing in this regard were it to approve the Peterhead gas-burning power station – a project that will demand continued gas extraction, production and burning until at least the middle of the century.

The Global Carbon Budget 2024[6] finds that CO_2 emissions from fossil use are on track to increase by 0.8% from 2023, reaching a global record high despite repeated warnings, including from the International Energy Agency, that there can be no new fossil fuel infrastructure if there is to be a chance that the world limits global warming to within the Paris Agreement targets.

Friends of the Earth Scotland believes that approving this project would risk Scotland's international climate obligations, and not only on Scotland's share of reducing emissions in line with international treaties. The development would be responsible for emissions in other nations, with the EIA stating that **the majority of operational emissions, 57%, would be released outside Scotland** during the production and transportation of the gas used to burn in the power station. Effectively, the Scottish Government's decision to build this power station would demand gas to be extracted and produced in other countries – risking the ability of those countries to phase out fossil fuels, curb emissions and deliver a just transition for their citizens.

[4] See Figure 3, https://oilchange.org/wp-content/uploads/2024/03/Troubled-Waters-Report.pdf
[5] https://www.unep.org/resources/emissions-gap-report-2024
[6] https://essd.copernicus.org/articles/17/965/2025/essd-17-965-2025-discussion.html

In the context of escalating climate impacts and rapidly shrinking global carbon budgets, the Scottish Government must realise that approving this project would have impacts far beyond Scotland's borders.

The developer acknowledges that "A moderate adverse effect will be seen to the global climate in terms of greenhouse gas emissions, including upstream GHG emissions associated with the supply of natural gas and the combined operation of the existing Peterhead power station considered cumulatively up to 2040." (7). However, the Impact Assessment Methodology (18.3.3.1) states that "The UK's and Scotland's relevant five-year carbon budgets will be used as a proxy for the global climate". This is not an adequate proxy. A recent study by Lamboll et al[7] assessing the remaining global carbon budgets have made clear that the global carbon budgets for 1.5C and 2C are approximately 4 and 14 years of current global emissions respectively, with Professor Anderson interpolating that for the UK to keep within the 1.5C budget would require a straight line emissions reduction from 2025 to 2032/3.

Scotland's climate legislation

The Climate Change (Emissions Reduction Targets) (Scotland) Act[8] sets a legally binding framework for reaching the Scottish Government's long-term target of reducing emissions to net-zero by 2045.

Since Scotland's Climate Act was first introduced in 2009, the Scottish Government has missed 10 out of 14 annual climate targets. In 2024, the Scottish Government found itself in a position whereby its failure to enact sufficient mitigation policies meant it was likely to be in breach of duties under the Act. The government's climate advisors, the Climate Change Commitee, stated[9] that the Scottish Government's lack of action and *"the acceleration required in emissions reduction to meet the 2030 target is now beyond what is credible".* The publication of a new Climate Change Plan was required imminently under the Act however the government was now unable, due to its own earlier failures, to produce a set of policies that would deliver the emissions reductions required to meet the legislated 2030 target. Publication of a plan that did not deliver the required emissions reductions would have been a breach of Act, and so the Scottish Government introduced a new Bill to remove all annual targets and replace them with a system of five-yearly carbon budgets. Friends of the Earth Scotland criticised this Bill, noting that it was not the system of annual targets that was at fault, but the Scottish Government's failure to act on them.

[7] https://www.nature.com/articles/s41558-023-01848-5
[8] https://www.legislation.gov.uk/asp/2019/15/contents/enacted
[9] https://www.theccc.org.uk/wp-content/uploads/2024/03/Progress-in-reducing-emissions-in-Scotland-2023-Report-to-Parliament.pdf

Set against this backdrop of missed targets, constrained global carbon budgets and dire requirement to meet our international and national climate commitments it is clear that swift action to reduce Scotland's climate emissions is of urgent necessity.

Friends of the Earth Scotland believes that approving this project will jeopardise the Scottish Government's ability to reach the legally binding target of net-zero emissions by 2045.

As noted above, the climate change assessment (6.10) states that this project will have a **'Moderate Adverse and Significant' impact**, becoming responsible for *"a growing proportion of Scottish and UK carbon budgets"* and will **continue to have significant annual emissions for at least 10 years beyond Scotland's legally binding net-zero target date of 2045.**

The assessment states that this project alone would be responsible for 41.8% of the Scottish carbon budget in 2044. This means that other parts of Scotland's society and economy will need to cut emissions further and faster to allow for this one power station. **This is an incredibly high-risk scenario, one that has potential to see Scottish Ministers in breach of their duties under the Climate Act.**

It is worth remembering that every tonne of carbon emitted from a power station (even one with CCS) is a tonne that cannot be emitted from other sectors. There are still huge reductions to be made in sectors such as transport and agriculture. Electricity generation, including flexible generation, has far more readily available, proven and cost-effective solutions to decarbonisation that continued fossil fuel use with CCS. In light of our already constrained carbon budgets, allocating emissions to power generation where evidence suggests CCS has a limited role will mean other sectors much do more, and more rapidly.

It is also important to note that the Institute of Environmental Management and Assessment (IEMA) guidance states that "A project with moderate adverse effects falls short of fully contributing to the UKs trajectory towards net zero".

SSE also highlight that the existing power station at Peterhead is projected to run until at least 2040. That is **a minimum of 10 years where two gas burning power stations are operating simultaneously**. This project is not a replacement for the existing power station. It is a brand-new station that will release emissions at the same time as the old one, currently the largest single source of electricity emissions in Scotland, further putting pressure on other sectors of the Scottish economy. It seems the Scottish Government does not understand this, as the recent statement[10] accompanying the amendment regulations to the Climate Act stated "SSE, the operator of the existing Peterhead gas-fired power station, has submitted plans to

[10] https://www.gov.scot/publications/statement-accompany-climate-change-scotland-act-2009-scottish-carbon-budgets-amendment-regulations-2025/pages/4/

develop and transition to a CCS-enabled Combined Cycle Gas Turbine ("CCGT") *to replace the current power station just after 2030*." The Scottish Government website notes the statement "indicates the likely proposals and policies in the next Climate Change Plan"; it is therefore **deeply concerning that the government does not understand this is not a replacement but two power stations running concurrently, which would require the next Climate Change Plan to make additional abatements in other sectors throughout the next decade.**

The station is expected to run for at least 25 years, the EIA noting that is expected to start generation from 2030 until at least 2055, "after which time the Project elements would be assessed for ongoing viability and, *only if no longer viable*, be decommissioned." (18.4.1.10). It is therefore certain that **the power station would continue to run for 10 years beyond Scotland's net-zero 2045 date, and potentially beyond.** After the net-zero date, all continuing emissions must be balanced by carbon removals in other areas. We know that some sectors such as agriculture will continue to have residual emissions, and the pressure on land, peatland and forestry for sequestration will be great. It is crucial to note that the Scottish Government has not published a plan or set of proposals for how it plans to address carbon removals after reaching net-zero. In light of this, **Friends of the Earth Scotland believes that it would not only be incredibly high risk to approve this project, but that Scottish Ministers could be in breach of their duties under the Climate Act if not able to account for how continued emissions from this project would be balanced after 2045.**

We also note that the Additional Information Report was published prior to the Scottish Government laying Amendment Regulations to the Climate Change Act proposing the new carbon budgets. It is our view that **the Scottish Government cannot fully assess the impact of this project on Scotland's carbon budgets, and therefore take a view on it, until carbon budgets have been passed into legislation by the Scottish Parliament** (expected Autumn 2025). Once carbon budgets have been set in law, **the developer must be required to update the significance assessment of operational emissions against the new carbon budgets.**

Upstream emissions

In 2024, a landmark ruling was made by the Supreme Court that stopped Surrey County Council from being able to continue with a plan to drill oil for 20 years. The case was brought by Sarah Finch on behalf of the Weald Action Group with the court finding that Surrey County Council had acted unlawfully through its failure to consider the indirect emissions from the burning of the oil.

In January of this year, the proposed Rosebank and Jackdaw oil fields were ruled to be unlawful[11] by the Scottish Court of Session with consent for their development stopped because *"the environmental assessments of each project failed to assess the effect on climate of the combustion of the oil or gas to be produced"* [Paragraph 30].

There is a clear requirement and legal precedent for the developer of the Peterhead-CCGT project to consider the indirect emissions of this proposal. They have not sufficiently done so. Friends of the Earth Scotland considers the assessment of upstream emissions to be incomplete and therefore an underestimate.

The updated climate assessment states that *"The majority of the gross operational GHG emissions from the Proposed Development are associated with indirect emissions resulting from the upstream extraction and supply of natural gas (Well-to-Tank emissions)*", calculating that 57% of the project's emissions are from indirect, upstream emissions. **This figure is still likely to be a gross underestimate given SSE's failure to calculate the full emissions impact of future gas supply.**

The developer appears to calculate all future emissions using a 2024 emissions factor scenario (18.3.4.2), basing all future projections on the carbon intensity of the current gas supply mix. However, UK and Scotland's gas supply mix is projected to change significantly, even over the next decade. The emissions factor will therefore also change.

Indeed, this is acknowledged in the Additional Information Report which notes the 'Well to tank (WTT)' emissions factor "is subject to change over time, depending both on the source of natural gas into the UK grid, and on the carbon intensity of different gas sources.". However, the EIA fails to account for or model this changing carbon intensity in the climate assessment, noting instead that *"the most up to date factor has been applied over the entire design life of the Proposed Development." (*18.9.1.3)

The UK Continental Shelf is a mature basin, with the North Sea Transition Authority (NSTA) projecting [12] an 11% annual decline of domestic offshore gas production. At current rates, gas production in the North Sea (even including the unlikely development of future reserves) is projected to decline faster than UK gas demand, meaning that the UK - including Scotland - will be increasingly reliant on imports for a larger proportion of gas consumption[13]. The UK is

[11] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.scotcourts.gov.uk/media/v0zkbsxy/2025csoh10-petitions-by-greenpeace-limited-and-uplift-for-judicial-review.pdf

[12] https://www.gov.uk/government/publications/statutory-security-of-supply-report-2024/statutory-security-of-supply-report-2024#fn:65

[13] https://ukerc.ac.uk/publications/uk-gas-security-managing-energy-security-challenges-and-transition-risks/

already relying on liquified natural gas (LNG) imports from the USA[14] and new gas demand will further increase emissions.

Analysis from Carbon Tracker[15] suggests that in the 2030s the UK could rely for over 50% of its supply on imported LNG, especially from countries such as the USA & Qatar. The NSTA has publicly recognised that **imported LNG has a higher emissions value than domestically produced gas[16], with a carbon intensity five or more times greater**[17] than domestically produced gas from the North Sea.

We therefore conclude that the upstream emissions calculated for this project, based on the current gas supply mix only, are a gross underestimate.

As previously highlighted, the landmark ruling by the Supreme Court in the Finch case found that Surrey Country Council had acted unlawfully in its failure to consider the indirect emissions from burning oil. On the judgement Lord Leggat stated [paragraph 97] that;

> *"Wherever GHG [greenhouse gas] emissions occur, they contribute to global warming. This is also why the relevance of GHG emissions caused by a project does not depend on where the combustion takes place. If an activity is carried on which* ***will inevitably result in significant GHG emissions, people who carry on the activity cannot be heard to say: "These emissions are not effects of our activity*** *because they are occurring far away among people of whom we know nothing"*

Given this **key omission and the legal precedent, Friends of the Earth Scotland believes Scottish Ministers would be at risk should they approve this proposal knowing that the developers have not adequately or accurately accounted for upstream emissions.**

Carbon Capture & Storage

In SSE's additional information submission to the Energy Consents Unit (dated 14th August 2023) that *"historic performance of demonstration CCS projects is by no means an indication of future performance"* (5/13) and that *"post combustion carbon capture is also the most technologically mature method of decarbonisation available for large scale power generation"*. However, there is a significant wealth of rigorous scientific evidence that refutes these claims.

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[14] https://www.gov.uk/government/publications/statutory-security-of-supply-report-2024/statutory-security-of-supply-report-2024#gas

[15] https://foe.scot/resource/the-real-climate-pollution-of-peterhead-power-station/

[16] https://www.nstauthority.co.uk/news-publications/north-sea-gas-is-almost-four-times-cleaner-than-lng-imports/#:~:text=The%20report%20shows%20that%20around,more%20carbon%20intensive%20gas%20imports.

[17] https://carbontracker.org/reports/kind-of-blue/

There are only 40[18], predominantly small-scale, carbon capture and storage (CCS) projects currently operational around the world. 80%[19] of them are used for Enhanced Oil Recovery (EOR) - the process of injecting captured carbon into near depleted oil wells to extract more oil - and none are working on a gas power station remotely close in size to the Peterhead CCGT proposal.

The EIA assumes the plant will achieve a carbon capture rate of up to 95%, modelling the GHG impact assessment on what SSE calls a "conservative estimate" of 90%.

The CCS industry has a history of overpromising and under delivering, and **there is no evidence to support SSE's claims that the plant will reach 90-95% capture rate.** A study[20] of the capture rate of large-scale CCS projects from the Institue for Energy Economics and Financial Analysis shows that despite industry claims of 90-95% capture, **no project is consistently capturing even 80%.** The Boundary Dam coal-CCS power station in Canada promised a 90% capture rate but throughout its 10-year operating period achieved a far lower average capture rate of around 65%.

The Institue for Energy Economics and Financial Analysis study also highlights that **no large-scale project in a gas fired power plant has ever been done at commercial scale.** Research by Carbon Tracker confirms that "today, there are **only a couple of pilot projects applying carbon capture on gas turbines at a scale about 20 times smaller than the proposed Peterhead-CCS**[21]".

Carbon Tracker elaborates that "reaching high levels of carbon capture for a gas-power plant is even more challenging due to the lower concentration of CO_2 in the flue gases (i.e., 4% for gas turbine vs 12% for coal) and the increased demand for flexible operations", noting that **gas power stations are increasingly required to provide flexible generation and be able to switch on and off frequently but there remains significant "uncertainties around the capability of capture units to operate efficiently in these operations**".

Indeed, SSE state "the Proposed Development is designed to be able to operate .. in a flexible (dispatchable) mode in the future ... dispatchable mode refers to highly flexible operating on demand and dispatched according to market conditions." and assumes the carbon capture

[18] https://www.globalccsinstitute.com/resources/publications-reports-research/global-status-of-ccs-2023-executive-summary/

[19] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.catf.us/wp-content/uploads/2018/11/CATF_Factsheet_CO2_EOR_LifeCycleAnalysis.pdf

[20] https://ieefa.org/ccs

[21] /https://www.tatachemicals.com/upload/content_pdf/integrated-annual-report-fy-2022-23.pdf, https://www.entropyinc.com/investors/corporate-presentation#newsreleases

rate would be 90% in all operating modes, however, does not provide any evidence for these assumptions (18.6.2.3).

In fact, the report states "**there is limited information on CO2 emissions during start-up of the CCP and this will not be quantifiable until after the detailed design stage** and verified through plant commissioning." (18.3.4.6). Given this assertion and the wider lack of evidence, it seems optimistic at best to suggest that 90% in these scenarios is a 'highly conservative assessment".

Overall, 80%[22] of large-scale CCS projects have failed due to technical issues or financial overspend. CCS is not a new technology and there have been decades dedicated to trying to make it work. The University of Oxford Smith School of Enterprise and Environment[23] found that there is no evidence of technological learnings or cost reductions in any part of the CCS process across capture, transport and storage in the last forty years.

In addition to this, research from Imperial College London found that carbon storage figures in official global reports have been overestimated by 19-30%[24]. This is despite the investment of $83[25] billion dollars in hundreds of trials and £30 billion in public subsidies trying to make CCS work. For comparison, peatlands globally store 10% of annual emissions [26] while peatlands in the Flow Country, Caithness and Sutherland, sequester 400 million tonnes of CO_2[27].

Given the absence of credible, real-world evidence demonstrating any capture rates in the gas power plant sector - and in light of the damning track record across the wider power sector, including coal-fired generation and natural gas processing - it is highly questionable what basis the developer has for claiming, with such certainty, that a 90–95% capture rate will be achieved immediately if at all.

Every tonne of carbon not captured will limit what can be emitted from other sectors and capture rate scenarios that over-estimate should not be taken lightly.

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[22] https://www.sciencedirect.com/science/article/abs/pii/S030142152100416X?via%3Dihub

[23] https://www.smithschool.ox.ac.uk/news/heavy-dependence-carbon-capture-and-storage-highly-economically-damaging-says-oxford-report

[24] https://www.energymonitor.ai/tech/carbon-removal/global-ccs-rates-overestimated-by-up-to-30-imperial/

[25] https://www.bloomberg.com/features/2023-carbon-capture-technology-running-out-of-time/?cmpid=BBBXT091823_ENERGY&utm_medium=email&utm_source=newsletter&utm_term=230918&utm_campaign=energy&sref=hbrEUvu2

[26] https://www.unep.org/news-and-stories/story/peatlands-store-twice-much-carbon-all-worlds-forests

[27] https://www.fcrt.org/the-flows/#:~:text=Geologically%20speaking%20the%20Flows%20consist,and%20the%20water%20table%20high.

The EIA reflects unevidenced optimism, rather than a worst-case scenario. Even with the developer's assumptions, the project is set to have a moderate adverse and significant climate impact, and account for 42% of Scotland's carbon budget in 2044. **Clearly, the climate impact of lower capture rates would be far greater.** The developer should be required to develop a worst-case scenario which accurately reflects the reality of gas-CCS today.

In light of the evidence gap on the efficacy of gas-CCS and the veracity of the developer's claims, Friends of the Earth Scotland believes that Scottish Ministers would be acting irrationally to approve this project and assume that, against all evidence, carbon capture on this station would be the global exception to the rule.

Reliance on a third-party project

The Peterhead Low Carbon CCGT Power Station Project proposal **is entirely dependent on the separate Acorn carbon capture & transport projec**t - which is a joint venture with the Scottish cluster in partnership with Storegga, Shell UK, Harbour Energy, North Sea Midstream Partners and National Gas - to transport & store any carbon that SSE are claiming can be captured.

This is acknowledged in the Additional Information Report, with SSE stating that "It is intended that the Proposed Development will connect to the Acorn Project infrastructure to be delivered by Storegga with their partners Harbour Energy and Shell. This pipeline will connect the Proposed Development to transport carbon dioxide for offshore geological storage below the Central North Sea. **These elements do not form part of this Application but are being progressed by third parties**" (1.1)

Acorn is **not in the consenting stages and therefore there is no official ability to cross reference these two interdependent applications.** The developers state (Volume 4: Appendix 2A) that the Acorn project has submitted an Initial Proposal of Application Notice (POAN) which is awaiting decision and submitted 28 June 2021.

However, it is uncertain whether the Acorn project will ever be submitted for planning assessment or could ever successfully operate at the scale required. This uncertainty is underscored by fact the Scottish Government committed £2million[28] in funding to support a feasibility study as recently as July 2024 to "explore how a pipeline could transport Carbon Dioxide from Scotland's central belt to the Northeast". The outcome of which has been reportedly concluded[29] but not made public.

[28] https://www.gov.scot/policies/oil-and-gas/carbon-capture-utilisation-and-storage/#:~:text=The%20Scottish%20Government%20has%20provided,Storage%20project%20at%20St%20Fergus.

[29] https://www.parliament.scot/chamber-and-committees/questions-and-answers/question?ref=S6W-37095

SSE has not adequately outlined the consequences of this dependency on climate, local & national ecology and employment figures if Acorn is refused, delayed or does not transport and store carbon successfully. **It is also impossible to consider the combined and cumulative effects of these projects without being able to assess their individual EIAs in tandem.**

Further, without this information and by consenting the proposal to build a new gas burning power station without conclusive feasibility studies and/or operational transportation and storage infrastructure there is a high risk that the proposed development could effectively be an unabated gas power station, without any infrastructure in place to store carbon and sending more emissions into the atmosphere.

Friends of the Earth Scotland considers this to be a significant gap; Scottish Ministers cannot conduct full due diligence on this application without sight of the proposals for the Acorn project upon which Peterhead power station would be dependent.

National and local climate policy

National Planning Framework 4 (NPF4)

Whilst the NP4 does propose potential opportunities for CCS, it also makes clear that *"if any [Industrial Green Transition Zone] IGTZ is found to be incompatible with Scotland's transition to net zero, Scottish Government policy, along with designations of and classes of development, will change accordingly*". The developers of the Peterhead CCGT project – which makes up part of the Scottish Cluster referred to in NPF4 - have provided **inadequate reasoning that it will help deliver the Scottish Governments transition to net-zero by 2045.**

The developers make clear, using their own calculations, that this project would have a "moderate adverse" and "Significant" impact on the "basis that emissions are likely to account for a growing proportion of Scottish and UK carbon budgets". The developer has also recognised (18.6.2.39) that the Institute of Environmental Management and Assessment (IEMA) guidance states: *"A project with moderate adverse effects falls short of fully contributing to the UKs trajectory towards net zero"*.

As outlined above, Friends of the Earth Scotland believes that this project is incompatible with Scotland's transition to net-zero and must alter policy accordingly.

Aberdeenshire Local Development Plan

Climate change (Section 13) is a key consideration in the Aberdeenshire Local Development Plan [30] stating *"for Aberdeenshire, this means reducing the use of energy (both in the*

[30] https://www.aberdeenshire.gov.uk/planning/plans-and-policies/ldp-2023

distribution of development and within developments themselves), conserving water & promoting energy generation by renewable sources" The development plan also acknowledges the impact of local developments on climate e.g. *"all developments must be designed to reduce carbon-dioxide emissions and reduce the use of energy"*.

As this objection has explained, the proposed development is not inherently low-carbon and has not provided sufficient reasoning of its ability to adequately reduce carbon dioxide emissions. This is due to a variety of overlooked factors along the carbon, capture & transport chain including high upstream emissions that have been ineffectively calculated, cumulative greenhouse gas lifecycle emissions and overstating capture rates against global evidence averages.

Further, the Aberdeenshire local development plan states "P4.3: Planning permission may be refused for potentially hazardous developments, or for other forms of development in close proximity to existing hazardous developments, *in the event that insufficient information has been submitted to demonstrate the impacts or where the impacts are unclear or unknown*."

Due to the lack of information regarding the interdependent nature of this development with another planning application related to the Acorn project, there is a clear lack of transparency around the cumulative and interlinking effects of this development regarding its true impact on emissions and in particular the environmental hazards and risks to human health relating to the transportation and storage of any CO_2 captured at the site.

Pipeline safety

Carbon transportation is a complex process that can have serious safety risks. CO_2 is odourless, colourless and is an asphyxiant that's heavier than air. If CO_2 leaks from an area, it does not dissipate quickly and can significantly spread from the initial migration site. When CO_2 is transported in pipelines it is compressed which increases its density and pressure meaning it undergoes rapid state changes which in turn can increase the chances of pipeline corrosion and failures and can result in a huge and rapid release of pressurised CO_2 into the environment[31].

The Scottish Government stated[32] that the existing Feeder 10 pipeline could be used to transport captured CO_2 onshore from the central belt running through areas[33] with significant residential dwellings including but not limited to Forfar, Dunblane, Stirling, parts of Perthshire

[31] https://pstrust.org/wp-content/uploads/2023/06/carbon_dioxide_pipeline_safety_summary_6_21_23.pdf

[32] https://www.gov.scot/publications/negative-emissions-technologies-nets-feasibility-study/pages/9/

[33] https://www.research.ed.ac.uk/files/26630425/26617554._AAM..pdf

and Aberdeenshire north to St Fergus and then out for potential storage in geological reservoirs in the North Sea.

The proposed development would attempt to use this pipeline to transport any CO_2 captured on site. It is critical to note that there is no substantive evidence to suggest that the Feeder 10 pipeline – which was used to transport natural gas and is currently redundant – can provide a consistent and safe method of transporting CO2. Pressurised CO_2 does not interact or travel through pipelines like natural gas. Impurities such as water and hydrogen sulphide can significantly alter pipe safety and increased the risk of corrosion.

The proposed development has not provided adequate information on its interdependence with the pipeline and transportation network being overseen by the developers of the Acorn project with pipeline integrity and toughness still largely unknown. Huge unanswered questions remain on the ability for any carbon captured to be transported through multiple council areas and communities along 280km of repurposed pipeline in a consistently safe and verifiable way that has been based on real world testing.

Outage rates

The EIA report states that *"in the event of CCP outages it could be necessary to operate the Proposed Development for a short period of time without carbon capture, with exhaust gases from the CCGT being routed via the HRSG stack"* (4.4) but does not estimate the potential emissions of unabated operations during such outages.

The report estimates that unplanned outages of the **transport and storage system** *"are assumed to occur no more than 3% of the time, based on stated assumptions for similar projects with CCS such as the proposed Net Zero Teesside power station"* (18.3.4.4).However, the transportation and storage unavailability of the aforementioned project is actually 6.5%[34] indicating a lack of cohesion with other UK CCS projects and a further under-estimate on emission figures.

Even short periods of unavailability would have a significant impact on total emissions, as hourly CO2 emissions in unabated mode are almost ten times greater than assumed during normal operations (Table 18-25).

'Do nothing' scenario

The alternatives considered by the developer (Section 5.2) are framed almost entirely around a 'do nothing' scenario—continuing with an unabated gas-burning power station. This framing

[34] chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010103/EN010103-002807-NZT%20DCO%201.2%20-%20Application%20Guide%20(Rev.%2019.0)%20-%204%20Aug%202023.pdf

rests on the flawed assumption that our only choices for meeting carbon budget targets are either to push forward with unproven CCS or to persist with unabated gas, while ignoring the wide range of proven, readily available technologies and scenarios that are already delivering emissions reductions.

In reality, Scotland generates more electricity than it consumes and is a net exporter of electricity[35]. The priority and alternative scenarios considered should include enhancing electricity storage and flexibility capacity (appropriate levels of battery storage, pumped hydro, energy efficiency measures, and grid upgrades), rather than building additional gas power stations that are fundamentally unnecessary.

Employment & economy

There are few CCS projects in operation in the world from which to draw evidence to contextualise the impact of the proposed Peterhead power station on employment and the wider economy. The original Environmental Impact Assessment for the power station, submitted by SSE, models that there will be just 50 operational jobs at the new plant once it is up and running. They state that "*these may be new jobs or jobs undertaken by personnel at the existing power station.*"[36] At the existing plant, there are approximately 80 jobs[37], so this represents a reduction in operational jobs at the site. SSE explicitly state in their planning application that *"the direct, indirect and induced employment created by the operational phase of the Proposed Development is likely to have a minor beneficial long term (not significant) impact*."

The construction jobs make up the majority of the project's employment, with an average of 776 people employed over the 42-month period.[38] It should be emphasised that construction jobs are not unique to projects such as this one and, when supply chains are rooted in shared, public ownership, renewable energy generation projects could create up to 27,000 jobs just in the Northeast of Scotland.[39] Additionally, SSE explicitly acknowledge that "**high level of employment leakage with a large proportion of jobs (and benefits) going to residents**

[35] https://www.gov.scot/publications/energy-statistics-for-scotland-q4-2023/

[36] https://www.ssethermal.com/media/a0gjkrmv/main-report.pdf, p.34 ("SSE Thermal Peterhead Low Carbon CCGT Power Station Project: Environmental Impact Assessment Report Volume 2: Chapter 10 – Traffic and Transport" p.22)

[37] https://www.energyvoice.com/oilandgas/north-sea/219629/sse-announces-plans-to-axe-peterhead-power-station- (2020) [SSE to cut 11 of 90 jobs at the Peterhead plant]; https://www.sccs.org.uk/sites/default/files/inline-files/3-2%20Tom%20Snow%20Peterhead%20Carbon%20Capture%20Project%20and%20the%20Scottish%20Cluster.pdf (2023) p.6 [Refers to 40 FTE employees plus apprentices]

[38] https://www.ssethermal.com/media/a0gjkrmv/main-report.pdf, p.350 ("SSE Thermal Peterhead Low Carbon CCGT Power Station Project: Environmental Impact Assessment Report Volume 2: Chapter 17 – Socio-Economics, Tourism and Recreation", p.17)

[39] https://platformlondon.org/app/uploads/2023/12/Public-Ownership-NE-Scotland-1.pdf, p.6

outside of the local area, due to the size of the workforce and the specialist skills required and the number of potential workers available in the area."[40] Taken into consideration alongside the lack of significant beneficial impact from the operation of the plant in terms of employment, and the lack of meaningful benefit for local residents and workers during the construction period, **there is no justification for suggesting that the disastrous climate harm of this project could be offset by the theoretical economic case set out by SSE.**

Conclusion

In conclusion, Friends of the Earth Scotland believes that the climate impact of this project represents an incredibly high risk to the Scottish Government's ability to reach net-zero by 2045 and to the ability to deliver future Climate Change Plans, as other sectors will be required to decarbonise further and faster than may be feasible. It also represents a risk to Scotland's obligations under international climate law.

Furthermore, the assessment submitted in the Additional Information Report 2025 contains significant omissions with regards to the calculation of upstream emissions, carbon capture rates and unplanned outage. Each of these alone would significantly increase the lifetime emissions of the project, cumulatively they would result in the project having a Major Adverse climate impact which would seriously threaten Scotland's transition to net-zero.

The Scottish Government would be risking Scotland's legally enshrined climate targets and international climate commitments by stating, against all evidence, that carbon capture on this station will be the global exception to rule.

Friends of the Earth Scotland believes that Scottish Ministers would be acting irrationally to approve this project and that doing so could put them at risk of being in breach of duties under the Climate Act in future.

Friends of the Earth Scotland calls on Scottish Ministers to reject this application.

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[40] https://www.ssethermal.com/media/a0gjkrmv/main-report.pdf, p.350 ("SSE Thermal Peterhead Low Carbon CCGT Power Station Project: Environmental Impact Assessment Report Volume 2: Chapter 17 – Socio-Economics, Tourism and Recreation", p.17)