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Consents Manager
Energy Consents Unit

By Email only

14 August 2023

Your Reference
ECU00003433

Our Reference
Peterhead Low Carbon CCGT Power

ECU Reference: ECU00003433

SSE Thermal Generation (Scotland) Limited

**Peterhead Low Carbon CCGT Project, Land at and in the vicinity of the Peterhead Power Station Site,
near Boddam, Peterhead, Aberdeenshire**

Response to Friends of the Earth Scotland Comments dated 12th May 2022

Dear Mr McFadden

The below letter provides a response to the comments raised by Friends of the Earth Scotland (FoES) to the application for Section 36 consent under the Electricity Act 1989 for the Peterhead Low Carbon CCGT Power Station (hereafter referred to as the 'Proposed Development'). The FoES response is dated 12th May 2022, however it is recognised by the Energy Consents Unit (ECU) (via email dated 20th April 2023) that this was published on the ECU webpage on the 17th February 2023.

SSE Thermal Generation Ltd (hereafter referred to as the 'Applicant') has prepared the below response, itemising out the comments and 'themes' identified in the FoES response for ease of tracking between the points raised and the response. In light of the responses provided, the Applicant is of the opinion that the information presented does not constitute additional information but clarity on items related to technology and policy which are already documented through the Section 36 application material.

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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).

Further documentation in support of our representation has been submitted to ECU via email due to technical issues on the ECU website outside of our control.

Climate science is clear that use of fossil fuels must be rapidly phased out if we are to meet the critical 1.5oC threshold enshrined in the Paris Agreement, and the principles of equity under the UN Framework Convention on Climate Change require that rich, historical polluters like Scotland act fastest to curb emissions.

Scotland's 2019 Climate Change Act establishes in law the concept of a "fair and safe Scottish emissions budget". Extrapolating from remaining global carbon budgets for 1.5oC and 2oC, leading climate scientist Professor Kevin Anderson has made clear that such a budget "is inconsistent with any realistic interpretation of the roadmaps of CCS-based power generation".

The Scottish Government's overreliance on Negative Emissions Technologies (NETs) in plans to meet the targets set out under the 2019 Act has been heavily criticised, with both Parliamentary Committees and official advisers the Climate Change Committee urging Ministers to come up with a Plan B.

There is a clear historic failure of delivering Carbon Capture and Storage - which this application relies on - at the capture, transportation and storage stages of the process. The proposed development assumes highly optimistic capture rates and timeframes for operation which are not backed up by the evidence. The knock on impact of failure to deliver projected capture rates on our ability to meet climate targets is too high a risk to approve this development.

The proposal expects reduced capacity at the existing Peterhead power station, but does not rule out both plants operating at full capacity. It is not clear whether what is being proposed is in fact an additional rather than a replacement power plant. In the not unlikely event that CCS fails to deliver this could result in substantially increased carbon emissions and seriously jeopardise meeting our climate targets.

The minor and short term benefits of the proposed project are far outweighed by the real risk that it could pose to Scotland exceeding its constrained carbon budgets. Furthermore, research shows that renewables and energy efficiency offer far better value for money in terms of job creation than fossil fuel generation.

This development does not clearly have national development status under the current National Planning

The Applicant acknowledges the FoES response sets out the organisation's opinion of the Proposed Development as set out within the seven 'themes' as per the structure of their response. These themes are: Climate Science; Climate Change Legislation; Climate Change Plan Update; CCS Feasibility and Impacts on Climate Targets; Replacement or Additional Fossil Fuel Power Station; Economic Benefit; and National Planning Framework.

Comments from FoES in this summary section reflect an overview of the specific items raised under the themes below, which have been addressed in more detail in the sub-sections below. Key points raised in this summary section by FoES include matters relating to the committed carbon capture rates that have been assessed within the EIAR, operation of both the Proposed Development and the existing Peterhead Power Station, perceived limited and short-term economic benefits of the Proposed Development and the support for generation and CCS developments within the national planning policy. The Applicant does not agree with the position set out by FoES on these matters and this is set out below.

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Framework (NPF3) since it is for a new power plant rather than retrofit of the existing power station at Peterhead. The draft NPF4, due to be finalised in the coming months, demonstrates a substantial shift in Scottish Government policy that should rule out this development on the basis that it does not "demonstrate decarbonisation at pace", it could potentially "be used to justify unsustainable levels of fossil fuel extraction or impede Scotland's just transition to Net Zero," and it is not clear how it will "ensure the highest possible capture rates in the deployment of these technologies"

CLIMATE SCIENCE

Climate science is clear that to remain within the limits of the Paris Agreement, which commits nations to hold "the increase in the global average temperature to well below 2°C ... and to pursue efforts to limit the temperature increase to 1.5°C", there is no atmospheric space for new fossil fuel exploration, production or development and that production must begin to decline now and continue to be phased out over the coming decade.

The United Nations Environment Programme 2021 Production Gap report shows that the world's governments are on track to produce 110% more fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C, and 45% more than would be consistent with limiting warming to 2°C. The report finds that "global fossil fuel production must start declining immediately and steeply to be consistent with limiting long-term warming to 1.5°C." The proposed development for a new Combined Cycle Gas Turbine (CCGT) generating station at Peterhead represents a real risk of undermining both global and domestic efforts to reduce reliance on fossil fuels and begin a managed phase out of oil and gas that is in line with 1.5oC.

The International Energy Agency (IEA) report, 'Net Zero by 2050: A Roadmap for the Global Energy Sector', states that to reach global net zero by 2050 "There is no need for investment in new fossil fuel supply". Further, the Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change noted this year that "if investments in coal and other fossil fuel infrastructure continue, energy systems will be locked-in to higher emissions making it harder to limit warming to 2c or 1.5".

According to the principle of common but differentiated responsibilities enshrined in the Paris Agreement, wealthy countries like the UK with high historic carbon emissions and low economic dependence on oil revenue should cut emissions much faster than the global average, and phase out extraction faster than the countries for which it would be much harder. The recent Phase out Pathways for Fossil Fuel Production report by the Tyndall Centre for Climate Research has calculated equitable phase out dates for oil and gas producing countries and finds that for a 67% chance of limiting warming to 1.5°C the UK, and other rich nations, must end oil and gas production by 2031. This proposed development should not be permitted on the basis that it will lock us into continued oil and gas production and combustion well past this deadline.

The Applicant has clearly stated science-based targets, along with a Net Zero Transition Plan which sets out the short, medium and long-term actions which SSE is taking to meet these targets. Our 2030 targets include reducing carbon intensity of scope 1 and scope 2 emissions by 80% and reducing absolute scope 1 and scope 2 CO₂ emissions by 72.5% by 2030, based on a 2017 baseline year. Actions to achieve these targets include reducing emissions from unabated generation and developing low-carbon flexible generation to continue to support security of supply and provide the flexibility the energy system needs. On an annual basis, we report against our progress on the Net Zero Transition Plan. Reinforcing SSE's commitment to the achievement of its 2030 Goals, performance against them is linked to the long-term incentive element of executive remuneration.

UK and Scottish policy and strategy continue to recognise the immediacy of the need for carbon capture, with the technology deemed essential to meeting both UK and Scotland's net zero targets. The Scottish Government's Climate Change Plan identifies the need for CCS as critical to net zero and ensuring a just transition. The Climate Change Committee (CCC) has also said that CCS is 'a necessity, not an option' in reaching net zero. Therefore the Applicant disputes that the Proposed Development risks "undermining" action against climate change.

The FoES response also notes that the equitable phase out dates estimated by Tyndall Centre require an end to oil and gas production by 2031. However the 2031 date estimated by the Tyndall Centre is not consistent with Scotland's legally-binding emissions reduction targets, which require Net Zero by 2045. In addition, the CCC's recent 'Decarbonised Power System' report outlined that there will be a limited but important role for gas on the energy system in the decades ahead, including for use in CCS, while still being consistent with getting to net zero.

CLIMATE CHANGE LEGISLATION

The Scottish Parliament passed legislation in 2019 updating Scotland's climate targets in light of the increased ambition and emphasis on limiting temperature increases to 1.5oC under the 2015 Paris Agreement. Under the Climate Change (Scotland) Act 2019 the Scottish Government is legally obliged to deliver emissions reductions of 75% on 1990 baseline levels by 2030, and reach net zero by 2045. Ministers regularly reaffirm their commitment to the 1.5oC goal, including recently at COP26 in Glasgow.

The 2019 Act includes criteria to enable the variation and setting of targets. The criteria include "the objective of not exceeding the fair and safe Scottish emissions budget", and the "fair and safe Scottish emissions budget" is defined in the Act as being consistent with "holding of the increase in global average temperature to well below 2oC above pre-industrial levels, and pursuing efforts to limit the temperature increase to 1.5C above pre industrial levels". However, the Scottish Government set the target to reach Net-Zero emissions by 2045, without actually establishing what a "fair and safe Scottish emissions budget" for either "well below 2°C" or "pursuing ... 1.5°C" would be, and current climate science indicates that such a budget would require zero emissions sooner than 2045.

Professor Kevin Anderson providing evidence on CCUS to the Net Zero, Energy and Transport Committee (March 2022) extrapolating from IPCC global carbon budgets, notes that, "on a territorial basis, and including emissions from international aviation and shipping, Scotland's current annual emissions of carbon dioxide are in the region of 33.5MtCO₂. At this rate, Scotland will consume its "fair and safe" carbon budget for 2°C in under nine years and for 1.5°C in a little over four years." Anderson also notes that "in line with not exceeding 1.5-2oC this entails rapid decarbonisation, beginning now and being all but complete within one to two decades. Such a tight timeframe is inconsistent with any realistic interpretation of the roadmaps of CCS-based power generation."

The IEA Greenhouse Gas Research and Development Programme also show "scenarios for a constrained global carbon budget, especially for 1.5oC and high probability well below 2oC cumulative budgets, have limited fossil fuel CCS energy production". We believe the proposed development does not align with a "fair and safe Scottish emissions budget" and will expand upon this in the following subsections.

The Applicant acknowledges and supports Scotland's binding climate targets of 75% reduction (relative to 1990 baseline) by 2030 and net zero by 2045. SSE has committed to achieve net zero for scope 1 and scope 2 emissions by 2040 and for all emissions by 2050.

The worst-case scenario projections, which allow continuous operation of Proposed Development, are recognised within the assessment reported in the EIAR (Chapter 18 Climate Change) will account for a growing share of Scotland's annual emissions targets. The actual running of the Proposed Development however will depend on the energy demands at any given time, with the Applicant recognising and fully supportive of the fact that the majority of demand will be met by renewable energy sources in the first instance as a priority, with SSE building significant amounts of offshore wind capacity across Scotland and the UK. The Dispatchable Power Agreement, the business model designed by UK Government for power CCS projects, will also ensure that power stations equipped with carbon capture technology will run ahead of traditional gas-fired power stations, therefore benefiting the UK's decarbonisation targets.

From 2045 onwards, there is no carbon budget allocated to Scotland, so any emissions from any sector will exceed Scotland's annual budget and must be balanced with effective removals. Scotland's Climate Change Plan identifies the need for CCS infrastructure, the same infrastructure which Peterhead Carbon Capture Power Station can underpin, to support the delivery of negative emissions to achieve net zero by 2045.

The operation of the Proposed Development will be regulated via the UK Emissions Trading Scheme (UK ETS). The UK Government has confirmed that it will reduce the existing ETS cap to align with the requirements of the UK's Net Zero 2050 emissions trajectory. As an electricity generator, the Applicant is not entitled to any free allocation of allowances to offset the financial cost of compliance with the ETS. As the overall cap is reduced in line with the Net Zero trajectory, the cost of allowances will inevitably increase, incentivising the use of lower-carbon generation technologies and acting as a control measure to avoid exceeding Net Zero by 2050. But it is acknowledged by the Applicant that it will be possible for Scottish installations within the ETS (including the Proposed Development) to continue emitting (at low levels and very high marginal cost) during the period between 2045 and 2050. In addition, the UK Government has announced its intention to create a business model that will support investment in negative emission technologies, and that further work will be done to

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allow the ETS to deliver a market for negative emissions.

As outlined in paragraph three of the response in this 'theme' FoES note that a fair and safe Scottish emissions budget would require zero emissions sooner than 2045, and that at the current emissions rate Scotland consume its carbon budget in between 4 & 9 years, depending on whether aiming for 1.5 or 2 degrees. The Applicant notes that the estimates outlined in the FoES response do not align with Scotland's legally binding Net Zero target for 2045, along with stated interim targets, which are based on statutory advice from the Climate Change Committee.

In line with the above responses, the FoES opinion that the Proposed Development does not align with a fair and safe Scottish budget is not correct. The future operation of the Proposed Development must and will align with Scotland's legally binding Net Zero target for 2045 and stated interim targets.

CLIMATE CHANGE PLAN UPDATE

The recent Climate Change Plan update (CCPu), which sets out policies and proposals for meeting the targets in the 2019 Act, includes an emission reduction 'envelope pathway' for Negative Emission Technologies (NETs) that includes Carbon Capture and Storage (CCS). In this envelope 0.5MtCO₂ is meant to be captured in 2029 rising to 3.8 in 2030, 4.7 in 2031 and then 5.7 in 2032.

In its response to the Scottish Government following scrutiny of the CCPu the Environment, Climate Change and Land Reform (ECCLR) Committee reported that it had consistently heard evidence that the CCPu: "relies too heavily on Negative Emission Technologies (NETs), with a lack of a contingency (Plan B)". The Committee also stated that: "[we consider] that the abatement potential and schedule associated with the planned NETs in the draft CCPu needs to be reviewed in light of concerns about the achievability of these commitments as [we are] not convinced that it is realistic to think that the technology will operate for the first time in 2029 at significant scale - with a quarter of the entire gross emissions being delivered by negative emissions technology by 2032. The Committee considers that a Plan B is required given the challenges and dependencies associated with developing NETs and the incredibly tight timescales involved".

Furthermore, the Scottish Government's official advisers the Climate Change Committee warned in its December 2021 report on Progress in Reducing Emissions in Scotland that the "Scottish Government must make a quick decision on whether to continue with plans for removals to contribute to 2030 target" and come up with a Plan B "if it should turn out that GGR [greenhouse gas removals] cannot be delivered at scale on the necessary timetable, accompanied by a clear date - no later than 2023 - to implement these contingency plans if developments on CCS do not provide confidence that they can deliver by 2030.'

The FoES responses notes that the recent CCPu includes an emissions reduction pathway for NETs including CCS and that parliament ECCLR Committee heard evidence that the CCPu relies too heavily on NETs, with concerns that the NET pathway was not achievable. Overall FoES believe that there is a lack of confidence in the ability of CCS to meet emissions reductions targets, concluding that CCS technology has a history of failing. The Applicant wishes to note that historic performance of demonstration CCS projects is by no means an indication of future performance. Considerable and continued innovation and investment in the technology has provided the industry with great certainty of the deliverability of this capture rate. The Proposed Development will not be developed without a clear pathway to decarbonisation. The applicant is seeking a Dispatchable Power Agreement which would outline a regulatory framework within which the plant would need to operate. As set out within the EIAR operation of the plant will be based on a minimum 90% capture rate – this is a requirement within the design of the Dispatchable Power Agreement. The ECU and Scottish Ministers have the ability to further embed this commitment within any future consent of the Proposed Development via conditions associated with the Section 36 consent granted. With these powers and associated regulation there are sufficient controls to ensure the plant operates as reported and therefore the Applicant does not agree that there are grounds for the application to be rejected.

The Scottish Government has not responded sufficiently to these fundamental concerns with the feasibility of relying on NETs to meet emissions reduction targets. As we set out in the next section, and as heard by the ECCLR Committee, CCS has a history of failing to deliver that must be taken into consideration in relation to the permitting of this development, and ultimately see it rejected.

CCS FEASIBILITY AND IMPACT ON CLIMATE TARGETS

There is a clear historic failure of delivering CCS at the capture, transportation and storage stages of the process. According to the Global CCS Institute, less than fifth of CCS capacity under development in 2010 was operational by 2019. Further, deployment has also been far slower than predicted, with sites in development in 2010 with a potential capacity of 150Mt a year ultimately resulting in just 39Mt by 2020.

The Tyndall Centre for Climate Change Research state that during the initial deployment of CCS in the power sector, capture rates are often around 65% and that fossil fuel-based CCS is not capable of operating with zero emissions “due to “increased energy use and cost penalties” meaning that “current projects usually target 90% capture rate at peak capacity”. Carbon Capture and Storage (CCS) is therefore highly unlikely to be operational at 90% capture rates from the beginning of this project and may never be operational at this level or even at all.

The planning application does not appear to factor in time scales for differing capture rates nor does it give evidence for the suggestion that there could be “potential to capture more [CO₂]” [7.19.4] (suggesting that the development is aiming to capture 95%+). This - as noted above - runs contrary to evidence that demonstrates that historically CCS plants have not proven even 90% capture yet alone operated at higher levels. Evidence in the Tyndall Report shows that consistent capture rates on CCS plants - that have now been mothballed due to technical and economic failure - were not achieved due to “increased energy use and cost penalties”. Energy use and energy cost penalties do not appear to be factored into the proposed development plan meaning that capture rate projections are unreliable.

The planning statement states that “construction of the Proposed Development could (subject to the necessary consents being granted) start as early as Quarter 4 2023. Assuming an approximate 3 to 4 year construction programme followed by a period of commissioning, it is anticipated that the low carbon generating station could enter commercial operation around 2027. The timescales for commercial operation are linked to the development of the Acorn Project to which the generating station will connect.” [2.5.15] The proposed 3-4 year construction period is significantly more ambitious than estimates of industry body the Global CCS Institute which states that a “reasonable assumption would be that it takes 6-8 years on average for new CCS projects to progress through the full development cycle”. The proposed development as noted above states it “will contribute toward Scotland’s

Regarding the FoES commentary on the historic failure of CCS to achieve operational status or claimed capture rates as reported from the Tyndall Centre – please see response noted above. Under the design of the Dispatchable Power Agreement, stations must meet a minimum of 90% capture rate in order to receive revenue through this mechanism. This, combined with technical development and understanding, means the applicant has complete confidence in achieving this target and indeed exceeding it. The EIAR has been developed based on this as the reasonable worst-case in line with industry guidance on achievable capture rates and assessed appropriately. Evidence of the viability of this will be developed and provided to regulatory authorities (such as SEPA) through the Pollution Prevention and Control (PPC) Permitted process in advance of construction and throughout operation also ensuring that adherence to these commitments are monitored.

Regarding the timescales for construction and commissioning being reliant on Acorn project, this is something that the Applicant acknowledges however these again are informed by industry. The timing of when the Proposed Development may become operational is dependent on a number of external factors including the timeframes for gaining Section 36 consent, and the Acorn project which is linked to the UK Government’s Cluster Sequencing Process, among other factors. As stated above the relative contribution of the emissions from the Proposed Development are dictated by these timeframes and will be managed as part of the ETS.

In the final paragraph of this ‘theme’ FoES comment that even with 90% capture rate, the Proposed Development would still result in a significant release of CO₂ to atmosphere. The figure cited by FoES, that the emissions associated with CCS (100-300 gCO₂e/kWh), is not recognised by the Applicant, as the abated CCGT operational emissions should be c. 35g CO₂e/kWh at a minimum 90% capture rate. This carbon intensity figure is lower than the projected grid average until 2033. The power sector must decarbonise as rapidly as possible continuing the journey so far, but the imperative to decarbonise must be seen alongside affordability and security of supply constraints. CCGT with CCS provides back up generation capacity, that would be called upon

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greenhouse gas emissions reduction targets" [1.1.25] yet the planning application does not outline its potential impacts on those targets if as noted above a slower completion timeline may arise.

If CCS at this site does not become operational or does not reach promised capture rates- as historical evidence of other CCS plants suggests - there could be significant knock-on effects and a high potential of impacting the ability to meet our legally binding climate targets.

Even if a 90% capture rate was to be achieved there is still a significant release of CO₂ into the atmosphere. Climate science is clear that all greenhouse gas emissions must be globally eliminated (with some emissions remaining in agriculture). This means that the high lifecycle emissions that are attached to CCS (apx 100-300gCO₂e/kWh) make CCS, especially in the power sector where other options are already readily available incompatible with meeting climate targets under the 2019 Climate Change Act.

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when renewable generation is insufficient to meet demand, to ensure security of supply while reducing emissions by c. 90% per kWh compared to unabated operations.

REPLACEMENT OR ADDITIONAL FOSSIL FUEL POWER STATION

The Planning Statement notes that "the existing Peterhead Power Station's capacity will be reduced from 1,180 MW to around 300 MW and it will remain available to operate alongside the new low carbon CCGT generating station. However, the existing Power Station is only expected to operate if grid demand cannot be fulfilled by the new generating station." [1.1.11]. Furthermore the Non-Technical Summary of the Environmental Impact Assessment (EIA) says "As a result of the Proposed Development, the output capacity and operating hours of the existing Peterhead power station are expected to be reduced, thereby resulting in a reduction in carbon dioxide emissions from the site as a whole" [6.10]. Section 2.5.16 notes that the new 910MW "will be designed to operate 24 hours per day, 7 days per week".

This does not rule out the possibility for the proposed and existing gas powered plants to operate alongside each other at full capacity, including in scenarios where CCS is operating below the target capture rates or at all. Allowing this development to go ahead without a binding commitment in relation to the reduction of capacity at the existing plant risks potentially almost doubling emissions from the site.

Even if the new 910 MW power station operates alongside the existing 300MW station this would not result in a reduction of emissions across the site as stated but would actually see an increase in MW production and resultant emissions from 1,180MW (existing station) to a total of 1,210MW for both sites combined.

It is worth remembering that for every tonne of carbon emitted from a power station (even those with CCS) is a tonne that cannot be emitted from other sectors. The CCPu shows that there are still huge reductions to be made in areas such as transport. Electricity generation has far more readily available, proven and cost effective solutions to decarbonisation than continued fossil fuel use with CCS. In light of our already constrained carbon

In the Applicant's letter to the ECU dated 10th February 2023 a response was provided regarding the ongoing operation of the existing Peterhead Power Station. The Applicant has publicly stated that it does not envisage the existing Peterhead Power Station to continue unabated operations into the 2030s, as the company transitions to low carbon flexible thermal generation.

The short-term future of the existing units at Peterhead will be influenced by a number of factors, including the date at which the new generating station comes online, delivery of new capacity across the system by that date, system needs, levels of electricity demand, policy, and market signals.

On this basis, it is uncertain whether the three existing gas turbines will be required to operate alongside the Proposed Development for any period of time. However, our stated ambition is for the Proposed Development to effectively replace the existing station.

Again, it is worth stating that SSE has clear 2030 targets which requires an 80% carbon intensity reduction and a 72.5% reduction in absolute emissions (based on a 2017/8 baseline), therefore decarbonising our operations is a fundamental priority.

Regarding the FoES position that emissions from the site would increase, this is only correct in the scenario that both plants operate simultaneously with the existing power station at full capacity. As stated above this scenario is highly unlikely to materialise but is subject to a number of conditions external to the Applicant's control. Beyond these mitigating circumstances, the Applicant anticipates the closure of the existing Power Station prior to or

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budgets allocating emissions to power generation where above evidence suggests CCS has a limited role will mean other sectors must do more

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in line with the Proposed Development's operation. In any case, the existing and any new generating capacity will be regulated via the UK ETS (as discussed in the Climate Change Legislation theme above). Under the UK ETS all emissions will incur additional and increasing costs of compliance as the UK ETS cap aligns with the UK's Net Zero target.

The Applicant agrees with FoES's final statement regarding carbon budgeting, and that the power sector is no different to any other sector and must decarbonise as rapidly as possible; but it is noted that there remain hard to treat residual emissions in all sectors including power generation and the energy demand and security of supply for GB consumers requires diversity in generation sources.

ECONOMIC BENEFIT

The Planning Statement states that the proposed development "will generate a substantial number of jobs during both construction and operation" [7.6.2]. It goes on to note that this will bring a "minor beneficial effect on the local economy from the use of local services and accommodation" [7.6.3] and that during the project's operation [7.6.4] there will also be a "minor beneficial long-term effect on the economy."

Such minor and short term benefits of the proposed project are far outweighed by the real risk that the proposed development could pose to Scotland exceeding its incredibly constrained carbon budgets, and the impact of doing so on the regional and national economy.

Furthermore, a recent report from the Energy Research Centre looked at evidence from across 15 studies and estimated the number of jobs created per £million invested in different energy technologies. The report found that renewables and energy efficiency can create significantly more jobs than fossil fuel generation per £ invested: fossil fuel generation was found to create an average of three jobs per £million invested, compared to an average of 10 jobs per million for renewable energy technologies, with energy efficiency creating an average of 16 jobs per million invested.

As stated in the FoES response, the Applicant has been open within the assessment of economic benefit associated with job creation as a direct result of the Proposed Development, and was appropriately assessed within the EIAR. However the local economic benefits of the Proposed Development are not restricted by the direct and indirect job creation, and more so in how it will support the transition to a Net Zero energy generation system that balances the demands of decarbonisation with affordable electricity and provides security of supply.

A separate economic study, carried out by BIGGAR Economics¹, outlined the significant local, regional and national benefits associated with the Proposed Development. This included a £430m contribution to the region's economy over the project's lifetime, and £660m to the Scottish economy.

NATIONAL PLANNING FRAMEWORK

While NPF3 designates 'Carbon Capture and Storage Network and Thermal Generation' as a National Development, with Peterhead identified in this respect, the emphasis in NPF3 is clearly on retro-fitting the existing power station at Peterhead with CCS rather than developing a new one: "The conversion of Peterhead gas-fired power station can pioneer CCS technology and make best use of existing infrastructure" [3.19]. It also clearly pertains to CCS, not just a Carbon Capture Plant as proposed in this application.

The Applicant's Planning Statement (March 2022) provided an assessment of the Proposed Development against relevant policy contained in NPF3. The Planning Statement also considered draft NPF4.

The Applicant disagrees with FoES' interpretation that the Proposed Development did not have national development status under NPF3. Paragraph 3.10 of NPF3 confirmed a continued and important role for thermal generation in Scotland's future energy mix, with a requirement for new or

¹ <https://www.sse.com/news-and-views/2022/05/peterhead-carbon-capture-project-to-contribute-660-million-to-scottish-economy/>

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The stated aim of this national development is "to demonstrate that carbon capture and storage is feasible at a commercial scale by 2020, with full retrofit across conventional fossil fuel power stations by 2025-30." [6.5] As demonstrated above, even with the highly ambitious timescales outlined in this application, the proposed development could not possibly meet this aim. Further, there has been no progress towards achieving the aim of the 'Carbon Capture and Storage Network and Thermal Generation' national development in the 8 years since NPF3 was finalised, calling into question the feasibility of the proposal.

A new NPF is currently in draft form and due to be finalised this year. Given the timescales for finalisation of NPF4, and the significant shift in Scottish Government policy between the two NPFs (as outlined below) material consideration should be given to the final NFP4 in coming to a decision on this application.

The draft NPF4 includes potential for CCS on an existing or new power plant at locations including Peterhead as a national development under 'Industrial Green Transition Zones'.

However the criteria for such developments in the draft document demonstrates a substantial shift in Scottish Government policy by requiring that: "The deployment of hydrogen and Carbon Capture Utilisation and Storage at these locations must demonstrate decarbonisation at pace and cannot be used to justify unsustainable levels of fossil fuel extraction or impede Scotland's just transition to Net Zero." Furthermore, "for projects that utilise carbon capture and storage, we want to ensure the highest possible capture rates in the deployment of these technologies" [Part 2, 8].

Given that, as outlined in the sections above, the application before the ECU is for an additional power station that could run alongside the existing plant, potentially at full capacity and without any guarantee of the CCS element of the proposal - which is to be delivered by another developer - being up and running on the first day of operation, or ever, at the target capture rates, it is hard to envisage how the present application could meet the requirements outlined in draft NPF4.

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upgraded efficient fossil fuel thermal generation capacity, fitted with CCS. Furthermore, while in identifying Peterhead as an area for coordinated action (paragraph 3.41) NPF3 refers to the conversion of the existing power station to provide CCS as being one of a number of projects in the area, it does not preclude new thermal generation capacity with CCS coming forward. In addition, the 'Statement of Need and Description' for National Development 3 – a 'CCS Network and Thermal Generation' at Peterhead – confirms that development at this location can include "(d) construction of new or refurbishments to thermal generation power stations with a generating capacity of over 50 megawatts where that development includes on site carbon capture plant..." Therefore, to resist the Proposed Development on the basis of FoES' selective interpretation of NPF3 would not only be contrary to NPF3, but also fly in the face of Scottish energy and climate change legislation and policy, which establishes clear objectives for decarbonising the power and industrial sectors in Scotland and achieving the legally binding commitment to achieve net zero greenhouse gas emissions by 2045.

The existing station is coming to the end of its economic lifetime therefore it is not considered feasible to retrofit the existing power station as it wouldn't offer value for money to the UK consumer.

Notwithstanding the above, NPF3 has now been replaced by NPF4, which was published on 13 February 2023. NPF4 also replaces Scottish Planning Policy and forms part of the statutory development plan.

Part 1 of NPF4 sets out 'A National Spatial Strategy for Scotland 2045'. This is based on six overarching spatial principles, including just transition; conserving and recycling assets; local living; compact urban growth; rebalanced development and rural revitalisation. NPF4 confirms that by applying these spatial principles, the national spatial strategy will support the delivery of sustainable places; liveable places and productive places.

The National Spatial Strategy is supported by eighteen National Developments, including single large scale projects and networks of several smaller scale proposals that are collectively nationally significant.

Under 'Productive Places', NPF4 identifies a number of National Developments, which include 'Industrial Green Transition Zones' (IGTZs). The IGTZs are defined as supporting transformation of key sites, including by putting in place the infrastructure needed to commercialise carbon capture and storage and decarbonise industry. This

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innovation will provide green jobs, reduce emissions and help Scotland lead the way with new technologies. Peterhead is identified as forming part of the Scottish Cluster IGTZ.

Part 2 of NPF4 sets out National Planning Policy. Notably, Policy 1 states that “When considering all development proposals significant weight will be given to the global climate and nature crises.”

Part 2 of NPF4 includes a section on ‘Energy’. It confirms that the ‘Policy Intent’ in relation to Energy is:

“To encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies including hydrogen and carbon capture utilisation and storage (CCUS).”

The identified policy outcome for ‘Energy’ is for the expansion of renewable, low-carbon and zero emissions technologies. The Proposed Development, which involves the provision of new thermal generating capacity fitted with carbon capture plant, is therefore consistent with this policy outcome.

Policy 11 states that “a) Development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported.” This includes “vi. Proposals associated with negative emissions technologies and carbon capture...”.

Annex B of NPF4 lists the National Developments and sets out ‘statements of need’ for them. Two IGTZs are identified, with one being the Scottish Cluster and the other being Grangemouth.

NPF4 confirms that the IGTZs will support the generation of significant economic opportunities while minimising carbon emissions. Technologies that will help Scotland transition to net zero will be supported at these locations, with particular focus on low carbon and zero emissions technologies, including renewables and the generation, storage and distribution of low carbon hydrogen. The deployment of hydrogen and CCUS at these locations must demonstrate decarbonisation at pace and cannot be used to justify unsustainable levels of fossil fuel extraction or impede Scotland’s just transition to net zero. It is relevant to note that NPF4 acknowledges that there are no plans for offshore enhanced oil recovery as part of the Scottish Cluster.

The Proposed Development would deliver decarbonisation at pace – subject to consent the new generating capacity and carbon capture plant could be constructed within 3 years – while

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contributing to security of electricity supplies in Scotland. Furthermore, it would not involve fossil fuel extraction.

The description for the Scottish Cluster is set out below:

“The Scottish Cluster encompasses a carbon capture and storage (CCS) projects network and is a key strategic vehicle for industrial decarbonisation, energy generation, and the transportation and storage of captured carbon. The designation relates to projects that form a Scottish Cluster in the first instance specifically Peterhead, St Fergus and Grangemouth ... This national development will support the generation of significant economic opportunities for low carbon industry as well as minimising carbon emissions at scale, and will play a vital part in maintaining the security and operability of Scotland’s electricity supply and network. The creation of hydrogen and deployment of negative emissions technologies, utilising CCUS, at commercial scale will establish the opportunities to decarbonise industry, transport and heat, as well as other sectors, and pave the way for the transportation and storage infrastructure to support the growing hydrogen economy in Scotland.”

The statement of need for the Scottish Cluster is as follows:

“This national development is required to meet our targets for emissions reduction. It also supports a just transition by creating new jobs in emerging technologies and significant economic opportunities for lower carbon industry. It will help to decarbonise other sectors, sites and regions, paving the way for increasing demand to be complemented by the production of further hydrogen in the future. This will also help to deliver our spatial strategy by supporting investment in the North East and the Central Belt where there has been a relatively high level of output from fossil fuel industries.”

Annex B sets out the types of development that can be brought forward as part of the Scottish Cluster. These are:

- a) Carbon capture with high capture rates and negative emission technologies, transportation and storage of captured carbon forming part of or helping to create an expandable national network;
- b) Pipeline for transportation and storage of captured carbon and/or hydrogen;
- c) Onshore infrastructure including compression equipment, supporting pipeline transportation and shipping transportation of captured carbon and/or hydrogen;
- d) Offshore storage of captured carbon;
- e) New and/or upgraded buildings and facilities for the utilisation of captured carbon;

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- f) Infrastructure for the production of hydrogen on shore or off shore where co-located with off shore wind farms within 0-12 nautical miles;
- g) Infrastructure for the storage of hydrogen on shore or off shore, including on or near-shore geological storage;
- h) Port facilities for the transport and handling of hydrogen and carbon dioxide;
- i) The application of carbon capture and storage technology to existing or replacement thermal power generation capacity;
- j) Production, storage and transportation with appropriate emissions abatement of: bioenergy; hydrogen production related chemicals including ammonia;
- k) New and/or upgraded buildings for industrial, manufacturing, business, and educational or research uses related to the industrial transition;”

The Scottish Cluster designation does therefore provide scope for the retrofit of carbon capture plant to existing thermal generation capacity and the provision of new carbon capture enabled generation capacity.

Further to the above it is recognised that within the Aberdeenshire County Council (ACC) agree with the position of the alignment of the Proposed Development to applicable planning policy as per their committee report dated 30th May 2023 citing a recommendation for ‘no objection’.

Yours sincerely,

Tom Cramond
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