J0001

Reference: D/4260/2021

Greenpeace UK Submission to OPRED on Shell's Environmental Statement on Jackdaw

Shell are the proposed developers of Jackdaw gas field in the North Sea.

Following legal rulings on the wider impacts of CO2 emissions from burning oil and gas (so-called 'Scope 3 emissions'), Shell needed OPRED and the UK government to re-issue a development permit for the Jackdaw field in order to proceed. The re-issuing of such a permit required the assessment of the impact of those Scope 3 emissions. In order to do this Shell needed to assess the environmental impact of the CO2 emissions from the fossil fuels it extracted after they were burned.

Following the legal ruling, and before Shell could apply for re-permitting, the UK Government needed to issue supplementary guidance so that the regulator OPRED (Offshore Petroleum Regulator for Environment and Decommissioning) had some benchmarks against which to determine whether the development should go ahead, given the environmental impacts.

Greenpeace has examined the Shell document "Further Information required under DESNZ Regulation 12(1) Notices dated 21st July and 22nd September 2025 Part 1: Scope 3 Emissions Assessment" containing the new information about their Scope 3 emissions assessment

Greenpeace UK finds the following:

1. The **calculation of CO2eq emissions** seems reasonable given our understanding of the potential for fossil fuel extraction. Shell have accepted that they should treat the emissions as all fuel being combusted

2. No **mitigation or alternatives to Rosebank development is proposed**. The implication of this is that the emissions are either not significant or that the benefits of extraction justify the disbenefits.

3. **Shell fails to follow the regulatory guidance** because it does not assess Jackdaw in the full context of other existing oil projects globally

The supplementary guidance states that (p12):

> "OPRED's current view is that characterising scope 3 emissions from a project solely in numeric terms against global GHG emissions would not on its own provide a meaningful expression of the global effect of those scope 3 emissions, because of the obvious difference in scale between individual projects and global emissions levels."

It goes on to say (p12):

> "the [Environmental Statement] must consider the cumulative effects of the proposed project with other existing and planned future projects, in a global context. If global reduction pathways are used to contextualise magnitude of emissions as above, this approach should be inherently cumulative, as these pathways take into account a wide range of existing and planned projects and other activities. Alternatively, or in addition, developers may choose to use information from global oil and gas datasets and inventories."

This guidance is clear that an Environmental Statement

- can't rely on just saying the development is a 'drop in the ocean'
- should look at other fossil fuel developments in a global context

The Environmental Statement fails both these tests as outlined below in points 4 & 5

Further, Shell do not follow the guidance in assessing cumulative impact, as the guidance states that (p12)

> "The ES, when evaluating the significance of likely effects of the project on the environment must also consider and contain information on cumulative effects."

Whilst tables 5.1 and 5.2 only show *annual* emissions derived from the Jackdaw field. The claim from Shell that cumulative effects are assessed because the IEA scenarios look at fossil fuels:

> "the IEA APS and NZE scenarios inherently include existing and planned oil and gas projects thereby ensuring that this assessment is cumulative." (p20)

Is odd because although the IEA do look at oil and gas fields in depth they are not predictions of oil and gas output required, but emissions (and extraction) under certain policy and demand scenarios. Under at least the NZE scenario some reserves of oil and gas will need be left in the ground. In no way are the IEA scenarios predictions of what is going to be extracted, nor do they justify Jackdaw emissions or further fossil fuel extraction.

4. **Shell justify the development of Jackdaw on the grounds that it is a 'drop in the ocean'** compared to the global demand for oil and gas, even in a Paris Agreement aligned emissions trajectory. Yet every coal, oil and gas development globally could justify itself on those grounds so this provides no useful insight

Shell have produced tables 5.1 and 5.2 showing that the annual Scope 3 emissions from Jackdaw will be small compared to annual global emissions from energy and from oil and gas respectively.

However this is a version of the "drop-in-the-ocean" argument that the government's supplementary guidance says is not an adequate form of assessment, as stated above in the first quote from the regulator in point 3 above. Shell's explanation following table 5.2 on p21 is explicit:

> *"Jackdaw Scope 3 emissions represent a very small proportion of the cumulative future global emissions for oil and gas combustion in the relevant years. Therefore, Jackdaw Scope 3 emissions are not considered to have a likely significant effect on the ability of States to meet global Paris Agreement-aligned emissions pathways"*

This 'drop-in-the-ocean' argument is repeated in relation to UK emissions targets centred around Table 5.4

It is worth stating the challenges that remain on climate change.

Modeling from UNEP's Emissions Gap Report 2025, released in November 2025, found that within the next decade, global temperatures will likely exceed 1.5°C above pre-industrial levels and that greenhouse gas emissions would have to fall roughly by 55 per cent by 2035 to align with the 1.5°C pathway, well above what countries have promised. A more achievable, though still difficult, goal is limiting warming to 2°C, which would require emissions to drop around 35 per cent by 2035. Current national commitments, if fully implemented, would cut emissions only 12 to 15 per cent by that date — leaving the world well off target.

The development of Jackdaw would thus almost certainly contribute to the exceedance of the Paris Agreement targets (see point 5 below).

5. **Shell do not contextualise the impacts of the Jackdaw development with the cumulative impacts of existing oil and fossil fuel projects**

Existing peer-reviewed research shows that for a genuinely Paris-Agreement aligned emissions trajectory there is already too much fossil fuel in developed reserves available through existing developments.

The researchers find 40% of developed (operating) fossil fuel reserves would need to close down to stay within the 1.5C limit, so that governments not only need to stop new licences, but to "prematurely decommission a significant portion of [reserves] already developed." It includes as part of the conclusion that "some developed oil and gas reserves, alongside coal, would need to be kept in the ground."

Shell seem to believe that the cumulative impact analysis is effectively done by the IEA scenarios, but as noted above, the IEA scenarios are about policy not about fuel availability. Notably there is no comparison in the Jackdaw Environmental Statement

with current *expectations* of either oil or of fossil fuel production, and what that would mean for their project under a scenario where climate limits were adhered to.

Nor is there any quantification of the global carbon budget, and how Jackdaw's emissions will impact on it, and on the pathways to delivery of those budgets.

At no point do Shell attempt to analyse how the Jackdaw development is situated within those emissions from existing developments - it would be reasonable to assume that in these existing developments, the economic (and possibly political) commitment to exploitation is already very high. It thus fails to address the guidance in the second quote from the regulator in point 3 above:

> "the [Environmental Statement] must consider the cumulative effects of the proposed project with other existing and planned future projects, in a global context."

No attempt has been made by Shell to examine how Jackdaw could fit in with the scale of existing oil and gas developments and so what fossil fuel is committed to already globally unless there is early retirement of existing extraction.

Because of this absence of analysis, the assumption underneath the data presented is that….

6. Shell assumes, without evidence, that they and the Jackdaw field **are the lucky ones that can still produce emissions** in those climate-constrained scenarios despite other developed reserves around the world.

Shell choose to cite the International Energy Agency (IEA) scenarios to indicate Jackdaw is compliant with the 1.5C limit - although in fact all it shows is that the amount of gas expected to be produced at Jackdaw is smaller than the global demand, in several different energy and climate scenarios. The IEA have previously stated, and continue to say, that staying within the 1.5C temperature limit requires that no investment in new oil and gas is required.

If the full analysis of expected global production had been done, it would have been clear that Jackdaw production compatible with 1.5C scenarios would require that gas somewhere else in the world, from existing reserves, would have to stay in the ground.

For reference, Trout et al estimate that committed fossil fuel projects would create emissions of 936GtCO2, of which 18% is gas. This means that existing gas projects *on their own* would produce 165GtCO2. Forster et al (2025) this summer estimated that the remaining global carbon budget for a 50% chance of staying below 1.5C is now 130GtCO2. To be compatible with 1.5C Shell would need to show how extraction of gas at Jackdaw would mean other gas would stay in the ground. They do not do this.

In the absence of applying the tests laid out above, the kinds of analysis and justification laid out in the Environmental Statement could be used to justify any fossil fuel development in the world.

7. Greenpeace UK concludes that **the Environmental Statement does not justify Jackdaw, and is not compliant with regulatory requirements.** This is what OPRED should conclude, which would be in alignment with recent legal judgements in Norway. A submission from Greenpeace colleagues in that country, relating to Equinor's Rosebank field, is attached to this one. The flow of argument is the same for Jackdaw as it is for Rosebank.

8. **Missing from the analysis is the economic damage caused by the emissions** from the Jackdaw development. These are likely to be considerable. One paper determined, only looking at heatwaves, that "adding 4,434 metric tons of carbon dioxide in 2020…causes one excess death globally in expectation between 2020-2100"

Thus simple arithmetic indicates that Jackdaw scope 3 emissions of 35.8 million tCO2eq would lead to 8074 heat related deaths. Using the Treasury Value of Prevented Mortality of £2 million per death suggests the value of not going ahead with Jackdaw is over £16.1 billion. Clearly this is a rough-and-ready calculation, but it does not include on the economic downside, for example, infrastructure damage, air pollution impacts, or mortality and morbidity from non-heat related climate impacts (e.g. drought, flooding, wildfires, extreme storms etc). A total GVA for the project has not been calculated by Shell, but the value thus far of Jackdaw to the UK economy is only £2.1 billion. Jackdaw is not economically justifiable in anything other than the most blinkered and reductive way.

[redacted] Greenpeace UK,
December 2025

Greenpeace Norway

Offshore Petroleum Regulator for Environment and Decommissioning
Reference: ES/2022/001

Rosebank EIA Consultation statement

Greenpeace Norway welcomes the opportunity to comment on Equinor's assessment of combustion emissions from Rosebank. Our submission highlights Norwegian and European legal jurisprudence that is directly relevant to the UK and OPRED's obligations. Based on this analysis, we conclude that Equinor has not adequately addressed the required impacts and that the EIA cannot be regarded as legally compliant.

Equinor's EIA is incompatible with the EU EIA Directive

Why the interpretation of the EU EIA directive is relevant to the UK
The UK's EIA regulations are based on the EU EIA Directive, and many elements of the Directive remain in place through the European Union (Withdrawal) Act. Further, the UK Supreme Court's decision in [2024] UKSC *Finch* confirms that the EIA process must assess downstream greenhouse gas emissions from the project's products. It is on the basis of this case law by the UK Supreme Court that the UK Guidance on assessing scope 3 emissions was updated, resulting in Equinor's new assessment. Thus, the EU EIA Directive has clear legal significance and relevance in UK jurisdiction.

The recent judgement in Borgarting Court of Appeals
The legal requirements of scope 3 impact assessments, under the EU EIA directive, were recently clarified by the Borgarting Court of Appeal in Norway. The appeal case follows Greenpeace Nordic et. al.'s victory in the Oslo District Court in 2024 (case 23-099330TVI-TOSL/05), a judgment which was referenced and described as "persuasive" by the UK Supreme Court in *Finch* (para 173). Following the Oslo District Court ruling, Equinor and Aker BP have both submitted new EIA's of their respective projects – which the Norwegian Court of Appeals has now considered.

In case LB-2024-36810-4, handed down on November 14th 2025, the Court of Appeal concluded that the updated assessments do not satisfy the requirements under the EIA directive, and quashed the operators' licenses (PDOs).

The Court of Appeal clarifies that, in order to be aligned with the EIA directive, impact assessments must at the very least: i) assess the effect of cumulative combustion emissions from all Norwegian petroleum activities, ii) assess whether the project is compatible with the remaining 1.5 degrees carbon budgets, and iii) assess the indirect effects of greenhouse gas emissions on the factors listed under Article 3 of the directive:

(a) human beings, fauna and flora;
(b) soil, water, air, climate and the landscape;
(c) material assets and the cultural heritage;
(d) the interaction between the factors referred to in points (a), (b) and (c).

Attribution science is prominent in the latest IPCC reporting cycle, which constitutes best available science. Therefore, requirement (iii) listed entails using climate attribution science to quantify the effects that the project's downstream emissions will have on factors such as exposure of children worldwide to extreme weather events, melting of ice from ice caps and glaciers, melting of snow, sea level rise, heat deaths, etc.

Furthermore, the Court of Appeal clarifies, in accordance with the EFTA Court's recent advisory opinion in case E-18/24 and the UK Supreme Court's judgment in Finch, that environmental impact assessments must be carried out on the basis of gross emissions. The assessment must assume all greenhouse gases embedded in the petroleum resources will be released into the atmosphere. The analyses cannot rely upon speculative market substitution assumptions.

Similarly, the European Court of Human Rights recently confirmed in Greenpeace Nordic et al. v. Norway that it is forbidden under the European Convention of Human Rights (ECHR) Article 8 to approve oil and gas fields without carrying out in advance publicly available environmental impact assessments of the climate harm that would ensue from all gross emissions embedded in a field. The assessment must account for all cumulative emissions, assess the compatibility of producing the oil and gas towards international and national climate targets, including the remaining global carbon budget, and assess impacts for life and health.

Equinor's Rosebank assessment does not comply with any of the requirements clarified in the recent Court of Appeal judgment. First, the assessment does not consider the cumulative effects of combustion emissions from the UK petroleum sector. Second, while Equinor claims to have assessed Rosebank's compatibility with limiting warming to 1.5 degrees, their argument relies solely on the assumption of substitution. Equinor has merely considered whether the amount of oil expected to be produced at Rosebank is less than the global demand for oil, in several different energy and climate scenarios, some of which are aligned with the 1.5 degree target. In section 6.3.4 Equinor states:

> *"The key consideration in evaluating significance is not simply whether a project results in GHG emissions, nor the absolute volume of those emissions, but whether that project aligns with global emission reduction pathways".*

Equinor's analysis disregards that the world has already committed to producing far more fossil fuels than can be combusted without massively overshooting 1.5 degrees of warming (Trout et. al.). The only way to align Rosebank with a 1.5-consistent pathway, is to assume that Rosebank completely substitutes other producers' oil. That would go against the consistent clarification from the UK Supreme Court, the EFTA Court advisory opinion and the judgement from the Court of Appeals: The EIA must rely upon the gross effect of adding 254 $MtCO_2$ into the atmosphere, not undocumented assumptions around market substitution.

Third, Equinor has not assessed the indirect effect of adding 254 MtCO2 to the atmosphere, on the factors listed in Article 3 of the directive. Through best available climate attribution modelling, it would be possible, and relatively easy, to calculate Rosebank's effect on mortality, health, soil, water, air, climate and other factors. It is hard to understand why Equinor has not estimated Rosebank's effect on these factors. People have the right to know how the project will affect their lives, as legally required by the EIA regulations applicable to Rosebank.

To remain consistent with interpretation of the EIA Directive, and thus minimise the misalignment of UK and EU under the Trade and Cooperation Agreement, there should be consistency of interpretation of the judgments of the application of the EIA Directive. We believe that the UK government should follow the interpretation of the assessment of Scope 3 emissions and find that the Equinor scope 3 assessment is inadequate, and refuse to grant any permit for exploitation.

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JNCC Reference: OIA-11184

OPRED Reference: D/4260/2021, Further Information November 2025

Date: 18 December 2025

Jackdaw Field Development Further Information, UK North Sea Limited, Environmental Statement

Thank you for consulting JNCC regarding the above-mentioned development updates provided by UK North Sea Limited, for which we received a consultation on 20 November 2025. JNCC has previously responded to the original Jackdaw Field Development Environmental Statement (ES), most recently on 6 April 2022 (JNCC Ref: OIA-08611; OPRED Ref: D/4260/2021 - Further Information Feb 2022).

The advice contained within this minute is provided by JNCC as part of our statutory advisory role to the UK Government and devolved administrations on issues relating to nature conservation in UK offshore waters (beyond the territorial limit).

The proposed operations do not occur within a Marine Protected Area (MPA).

Our review has focused on **Part 2 – Updated Assessment of the Project**. For comments relating to other aspects of the application, we defer to the relevant statutory consultee.

Headline advice

JNCC thank the Operator for the updates that they have provided regarding the environmental impacts associated with the Jackdaw Field Development. JNCC agree with the report's conclusions that environmental effects associated with the current project status remain consistent with those identified during the original ES. Please see our detailed comments below relating to the 'further information November 2025' and our previous responses for our full advice.

Specific advice

Drill cuttings quantities and modelling

The Joint Nature Conservation Committee (JNCC) is the statutory adviser to Government on UK and international nature conservation, on behalf of the Council for Nature Conservation and the Countryside, Natural Resources Wales, Natural England and NatureScot. Its work contributes to maintaining and enriching biological diversity, conserving geological features and sustaining natural systems.

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The Operator states on page 49 in Appendix B of Part 2 – Updated Assessment of the Project that the actual mass of cuttings discharged is much closer to the values detailed in the ES than in either of the 2023 or 2024 modelling scenarios. The Operator has therefore chosen to use the modelling from the ES as a more representative area of impact in relation to the actual mass of cuttings discharged. JNCC considers it best practice to consider the worst-case scenario to enable a meaningful assessment of the full environmental impacts of a project. While the 2023 modelling scenario may have provided an overestimation of the area of permanent impact, JNCC consider this would have been the more appropriate approach. Given the mass of actual discharged cuttings is less than that used in the ES modelling and therefore, this provides an underestimation of the area of permanent impact to the seabed.

Cumulative seabed disturbance assessment

Modiolus modiolus Annex I Reef

JNCC note that on page 50 in Appendix B that the Operator has listed potentially sensitive habitats noted during the 2018 Fugro survey. One of the habitats listed is "individuals and small clumps of horse mussels (*Modiolus modiolus*)" but was not considered to represent Annex I reef. JNCC request that for future applications associated with this development that more recent survey data is used to inform the potential presence of Annex I reef.

Arctica islandica (ocean quahog)

Juvenile *Arctica islandica* were also found during the 2018 survey. We note that on page 52 of the document that the Operator states "it is not considered that the potential loss of a small number of juvenile individuals of this species will result in a significant effect on the population viability of this species".

Please note that ocean quahog (*Arctica islandica*) is a declining species in the North Sea region and there is uncertainty in its ability to recover. We would like to highlight that protection is afforded to quahog at all life stages, including juvenile quahog, and it is classed as an OSPAR threatened and/or declining species (and Priority Marine Feature, PMF, in Scottish waters). The presence of juveniles in an area can be an indication of a wider population, therefore impacts should be avoided wherever possible to allow the population to grow.

Other potentially sensitive habitats

We continue to advise the Operator to avoid and minimise impacts to the habitats and species listed within Appendix B, as much as practicable during activities.

Marine mammal mitigation

JNCC acknowledge the updated aspect relating to underwater noise detailed in Section 5.7 of Part 2 – Updated Assessment of the Project. While most aspects did not change or did not result in a change in the environmental effect, JNCC wish to highlight the points below for OPRED and the Operator in order to improve future submissions.

The Operator stated that the addition of an Acoustic Deterrent Device (ADD) would reduce the piling soft-start from 50 minutes down to 30 minutes by replacing “an energy equivalent section of the soft-start mitigation method”. In principle, this is an appropriate measure as it will ensure the soft start duration is in-line with the minimum requirement of 20 minutes specified in the JNCC marine mammal mitigation guidelines for piling (JNCC, 2010). However, we would expect to see noise modelling carried out specifically with the revised soft-start duration, with a recalculation of the SEL_{CUM} potential injury ranges. We would also require the details of the ADD to be deployed, and evidence that its use for 15 minutes would be sufficient to deter the species groups at risk of auditory injury from the recalculated injury zone. Furthermore, we would point out that any new noise modelling should use the new sound level thresholds published by NOAA in 2024[1], and which are now adopted in the UK.

We also wish to highlight that throughout the document, it was not entirely clear which aspects of the operations had already been carried out, as different names were used in the "Progress to date" section. For example, it was stated that the steel jacket installation had taken place, but it was not clear whether this referred to the wellhead platform, which was not discussed in this section but was stated later to have already been completed. We ask that consistency is applied in future documents.

Please contact me with any questions regarding the above comments.

Yours sincerely,

[redacted]

[redacted]

Email: [redacted]

Telephone: [redacted]

[1] NOAA (2024). Technical guidance for assessing the effects of anthropogenic sound on marine mammal hearing. Available at: https://www.fisheries.noaa.gov/s3/2024-11/Tech_Memo-Guidance_-3.0-_OCT-2024-508_OPR1.pdf

The Joint Nature Conservation Committee (JNCC) is the statutory adviser to Government on UK and international nature conservation, on behalf of the Council for Nature Conservation and the Countryside, Natural Resources Wales, Natural England and NatureScot. Its work contributes to maintaining and enriching biological diversity, conserving geological features and sustaining natural systems.

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By email: OPRED@Energysecurity.gov.uk

22 December 2025

Dear Secretary of State,

Jackdaw Field Development – Consultation Response – Ref. D/4260/2021

Introduction

1. This document sets out Uplift's response to the current consultation by the Offshore Petroleum Regulator for Environment & Decommissioning (**OPRED**) on the Further Information regarding the Jackdaw Field Development (**Jackdaw Project**) for which Shell has made an application for consent to the Oil and Gas Authority (OGA, operating as North Sea Transition Authority (**NSTA**)).

2. We note that following NSTA consent on 1 October 2025 to the assignment of interests in the Jackdaw field, UK North Sea Limited is now the developer for the purposes of the Jackdaw Environmental Statement.

3. In reviewing the Jackdaw Project's Further Information required under DESNZ Regulations 12(1) Notices dated 21 July and 22nd September (**Further Information**), we consider that it fails to comply with the requirements of the offshore Oil and Gas Exploration, Production Unloading and Storage (Environmental Impact Assessment) Regulations 2020 (**EIA Regulations**) and the Government's Supplementary Guidance for assessing the effects of downstream scope 3 emissions on climate from offshore oil and gas projects (**Supplementary Guidance**).

4. Our response is focused specifically on the Further Information Part 1: Scope 3 Emissions Assessment dated November 2025[1]. We make the following observations:

Assessing likely significant effects of the project

5. As set out in Finch[2] combustion emissions should always be treated as likely and significant effects of the project. Criteria against which these likely significant impacts can be contextualised must be legally relevant and apply the precautionary principle.

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[1] Further Information required under DESNZ Regulations 12(1) Notices dated 21 July and 22nd September Part 1: Scope 3 Emissions Assessment dated November 2025

[2] *Finch v Surrey County Council* [2024] UKSC 20.

6. While the Further Information acknowledges that the sensitivity of the receptor - the global climate - should always be defined as 'high' under the Supplementary Guidance, the contextualisation of the magnitude of GHG emissions of the project and the assessment of the cumulative effects is flawed leading to an overall conclusion on the likely significant effects of the Jackdaw Project that is neither scientifically robust nor lawful.

(i) Misleading comparison to global total emissions

7. The Further Information fails to comply with the Supplementary Guidance in evaluating the significance of the Jackdaw Project's scope 3 emissions, in the context of comparing them to global greenhouse gas (GHG) emissions. Instead, it compares the Jackdaw project's projected emissions with total global oil and gas production emissions under pathways with different temperature outcomes.

8. The Further Information directly compares the Jackdaw Project's maximum production case emissions with total global emissions under the International Energy Agency's (IEA) Announced Pledges Scenario (APS), and Net Zero Emissions by 2050 (NZE): *"The highest anticipated Jackdaw Scope 3 emissions comprise 0.015% against the global baseline of the IEA APS scenario and 0.020% against the global baseline of the IEA NZE scenario for the year 2030."*

9. By comparing the emissions of one single field to total global total emissions, as a percentage, the analysis is structured to render any individual project 'not significant' irrespective of its real and additive impact on cumulative emissions. This reasoning would imply that all oil and gas projects are not significant, as each represents only a small fraction of a much larger cumulative total. This type of '**drop in the ocean**' approach has been rejected by courts around the world[3] and in the Supplementary Guidance where it specifically states:

> "*OPRED's current view is that characterising scope 3 emissions from a project solely in numeric terms against global GHG emissions would not on its own provide a meaningful expression of the global effect of those scope 3 emissions, because of the obvious difference in scale between individual projects and global emissions levels*."[4]

(ii) Failure to assess the cumulative effects of the project

10. The Further Information fails to comply with the EIA Regulations and the Supplementary Guidance in evaluating cumulative effects of the project. Paragraph 4 of Schedule 6 to the EIA Regulations requires:

> "An assessment of the likely significant effects of the project on the environment, including those resulting from—

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[3] Gloucester Resources Limited v Minister for Planning [2019], NSWLEC 7, para. 515.
Saskatchewan v Attorney General of Canada [2021], re Greenhouse Gas Pollution Pricing Act SCC 11.
Milieudefensie v Royal Dutch Shell [2021], C/09/571932, para. 4.3.5
Milieudefensie v Royal Dutch Shell (Appeal) [2024], 200.302.332/01, para. 7.106
Urgenda Foundation v State of the Netherlands [2019], 19/00125, para. 5.7.7.

[4] Department for Energy Security & Net Zero (DESNZ) (2025). Supplementary Guidance for Assessing the Effects of Downstream Scope 3 Emissions on Climate from Offshore Oils and Gas Projects, p.12.

(a) ...
(e) the **cumulation** of effects with **other existing or approved projects**, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources".

11. The Supplementary Guidance emphasises this legal requirement for an assessment of cumulative effects. It is definitive in confirming that "*[g]iven the global effect of GHG emissions, the ES [Environmental Statement]* ***must consider*** *the cumulative effects of the proposed project with other existing and planned future projects, in a global context*" (emphasis added). It is not explicit on the methodology for doing so.

12. The Further Information fails to provide a lawful assessment of cumulative effects because it does not account for existing and committed production from operating or in-development fossil fuel projects. It fails to distinguish between total oil and gas production in modelled scenarios and the portion of that production that originates from existing or approved projects, as opposed to new developments. As a result, the analysis fails to situate Jackdaw's scope 3 emissions within a cumulative global context.

13. The Net Zero Emissions by 2050 Scenario (NZE) is an appropriately 1.5°C constrained pathway generated by the IEA's core modelling framework, the Global Energy and Climate (GEC) Model[5]. The GEC model shares many characteristics with Integrated Assessment Models (IAMS) and works closely with them. The NZE is a normative scenario, meaning it works backwards from the defined climate outcome of keeping the temperature rise below 1.5°C (with at least 50% probability). The GEC Model is an integrated energy system model whose scenarios (NZE and APS) are a primary input for climate assessment, much like the energy system modules within an IAM. The NZE and APS are the resulting narratives and quantitative projections from running the GEC Model under different policy and ambition assumptions.

14. Although the selection of NZE pathway was correct (unlike the APS see section (iv)), the methodology (see section (i)) and interpretation of the pathway in the Further Information is not. The Further information states that "*these scenarios inherently include existing and planned hydrocarbon projects thereby ensuring that this assessment is cumulative.*" This is an inaccurate interpretation of how the GEC model resources fossil fuels within its scenarios. In the NZE scenario, it will resource fossil fuels and the energy module as an IAM would.

15. IAMs represent oil and gas supply crudely. They typically do not model fossil fuel extraction at the project level, nor do they capture the pipeline of approved or existing developments. Consequently, IAMs do not reflect project life-cycle stages or operational details. Rather, IAMs are built around a set of energy service demands, such as heating, transportation, and industrial activity, which are determined by societal needs linked to key macroeconomic drivers, including Gross Domestic Product (GDP) and population. These models then determine the most cost-effective mix of energy sources to meet that

[5] Global Energy and Climate Model – Analysis - IEA

demand, selecting from supply options that include oil, gas, renewable energy sources, and other technologies.[6]

16. The volume of primary fuels extracted in any given scenario is, therefore, determined by the model's optimisation process, subject to a range of constraints and assumptions, including:

- The size of each energy service demand;
- Emissions limits consistent with the temperature target being modelled (e.g., 1.5°C or 2°C pathways and any permitted overshoot);
- More ambitious carbon dioxide removal (CDR) assumptions (e.g. afforestation, or bioenergy or direct air capture combined with carbon capture and storage (CCS)) allow IAMs to model higher fossil fuel supply, particularly in the near and medium term, because removals compensate emissions later in the century;
- The relative cost of different energy supply chains to meet each energy service demand (e.g., cost of oil to power combustion engine cars vs renewables to power electric vehicles (EVs));
- Supply-side limitations*, e.g., limits on the maximum amount of oil and gas extraction at the aggregate country or region level;
- Trade constraints (e.g., liquefied natural gas (LNG) export/import capacity); and
- End-use technology constraints (e.g., the rate of EV deployment).

17. In broad terms, the level of oil and gas demand projected in an IAM scenario reflects the outcome of these 'levers' rather than a pre-determined allocation of production. These models are not designed to disaggregate production by field, nor do they represent existing or approved projects. That is, they typically do not model the life-cycle stage of fossil fuel projects. This simplistic approach means that IAMs are not inherently cumulative in a manner that is relevant to the assessment of the significance of the Jackdaw Project and so fail to address cumulative impacts.

18. The simplistic approach also limits the value of IAMs in assessing significance and demonstrates that the developer has made inappropriate use of them to determine significance in the case of the Jackdaw Project. The "field vs global comparison" renders significance impossible to determine: under this approach, it is unclear what level of emissions from a single field would be considered misaligned with global production. If every new field adopted the same methodology, each would appear individually 'not significant', even as their combined output could far exceed levels compatible with climate-safe pathways, driving systemic overproduction and undermining net-zero objectives. The Further Information, therefore, fails to provide a robust or lawful evaluation of the project's overall climate impact. This approach neither aligns with the Supplementary Guidance, nor with best practice in cumulative emissions analysis.

19. A scientifically and legally robust approach to determining cumulative effects using pathways and, in turn, significance, would overlay existing and committed production from current and in-development fossil fuel projects onto the supply

[6] *Note IAMs typically do not model fossil extraction at the project level and, therefore, do not represent project life-cycle state or details of their operation.*

projected in the climate-pathway models (Figure 1). This would involve establishing a baseline of projected emissions from existing fields worldwide, with explicit assumptions about whether, how, and why any projects would produce less than their full reserves. This baseline should then be subtracted from emissions in a Paris-aligned pathway to determine the remaining 'emissions space' available for new projects. The project's production (emissions) would then be evaluated as an incremental addition to this existing and committed supply.

20. This cumulative approach, consistent with methodologies adopted in the IEA World Energy Outlook (WEO) scenario analyses[7], International Institute for Sustainable Development (IISD) report on navigating energy transitions,[8] and University College London (UCL) report on climate implications of new oil and gas fields in the UK[9], and peer-reviewed literature on establishing an accurate baseline[10], would enable a meaningful assessment of whether the addition of the Jackdaw Project's production is compatible with Paris-aligned pathways.

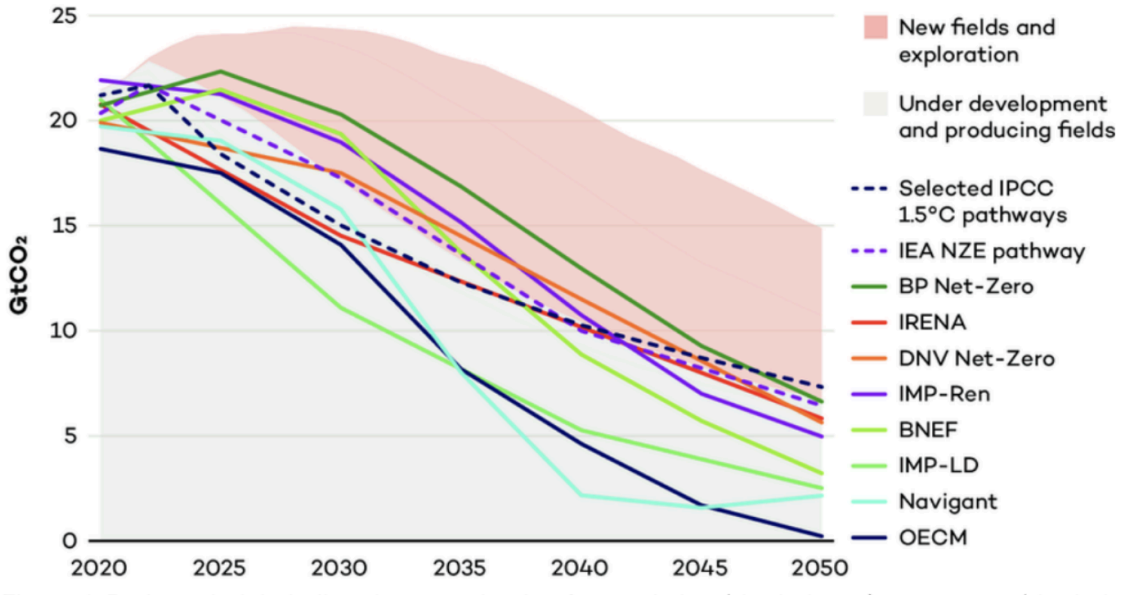

Figure 1: Projected global oil and gas production from existing (shaded grey) versus new (shaded pink) fields, compared to oil and gas consumption in 1.5°C scenarios. Source: Muttitt *et al* (2025), reproduced from IISD Navigating energy transitions 2022.

21. Consequently, the use of modelled global production volumes as the denominator in the analysis of the Further Information is methodologically inappropriate and it fails to produce a valid or cumulative assessment of significance. Global fossil fuel production data is available from providers such as Wood Mackenzie, Rystad, and IHS Markit. Peer-reviewed, credible estimates of committed emissions from fossil fuel production

[7] International Energy Agency (IEA) (2025), World Energy Outlook 2025.
[8] International Institute for Sustainable Development (IISD) (2022). Navigating Energy Transitions: Mapping the road to 1.5°C | International Institute for Sustainable Development.
[9] Muttitt G, Green F and Pye S (2025). The Climate Implications of New Oil and Gas Fields in the UK UCL Policy Lab, UCL Energy Institute & UCL Department of Political Science.
[10] Bustamante ML et al, (2024) The climate test: a tool to evaluate alignment of energy infrastructure decisions with climate goals. Climate Policy 25(5): 617-632

have also been published, are available and should be used[11].

22. Only a cumulative approach can provide a meaningful assessment of the project's compatibility with the UK's obligations under the Paris Agreement. The scientific evidence outlined above clearly demonstrates that there is no remaining allowance for new oil and gas projects within Paris-aligned pathways. Therefore, a credible, cumulative assessment of the Jackdaw Project's scope 3 emissions would conclude that there is no remaining allowance for the Jackdaw Project within Paris-aligned pathways, and, therefore, the project is not compatible with the UK's obligations under the Paris Agreement.

23. Overall, the developer has failed to use modelled pathways in a way that identifies the proportion of production that originates from existing or approved fields, as opposed to new developments. As a result, they have failed to situate the Jackdaw Project's scope 3 emissions within a cumulative global context.

(iii) Failure to consider global GHGs in a baseline assessment

24. The Further Information fails to consider global GHGs in the baseline assessment. According to the Supplementary Guidance, "*[a] reasonable future estimate of global GHGs affecting climate over the lifetime of a project needs to be considered as part of the baseline scenario (…) Therefore, the scope 3 emissions estimated to be produced by the project (…) should be evaluated in the context of a global baseline scenario of GHGs*"[12].

25. The Further Information's consideration of future GHG emissions describes various scenarios for future GHG emissions, but does not treat these as a baseline. A baseline, however, is *"a reference point against which the impact of a new project can be compared*"[13], making it an essential component of the impact assessment as it allows the project's impact to be measured as the difference between the state of the environment with, and without, the project. This is underlined by the Supplementary Guidance's requirement to present the scope 3 emissions from a new project against "***a no-project ("do-nothing") scenario***".

26. The Further Information's description of future emissions scenarios does not serve this function, as the scenarios do not consider the world without the project and offers no means to compare how the environment changes with the addition of the project. Jackdaw is a gas production project; as such, a relevant baseline is therefore a projection of gas production in the absence of the project.

(iv) Use of scenario incompatible with limiting global warming to 1.5 °C

27. The Further Information uses the International Energy Agency's (IEA) Announced Pledges Scenario (APS), which is not constrained by a Paris-aligned temperature target.

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[11] Trout K et al (2022). Existing fossil fuel extraction would warm the world beyond 1.5°C. Environ. Res. Lett. 17: 064010. Oil Change International (2023). Sky's Limit Data Update: Shut Down 60% of Existing Fossil Fuel Extraction to Keep 1.5°C in Reach.

[12] Department for Energy Security & Net Zero (DESNZ) (2025). Supplementary Guidance for Assessing the Effects of Downstream Scope 3 Emissions on Climate from Offshore Oils and Gas Projects, p.9.

[13] Institute of Environmental Management & Assessment (IEMA) (2022). Assessing greenhouse and evaluating their significance, 2nd edn, p.17.

The Further Information states that "*The IEA scenarios that are aligned with the more ambitious goals of the Paris Agreement are as follows….The Announced Pledges Scenario (APS) assumes that governments will meet their GHG and net zero targets on time and in full but that there will still be residual emissions in 2050. This scenario incorporates the UK NDC and Carbon budget targets.*" The APS pathway projects a global temperature increase of 1.7°C[14]; and therefore, is not aligned with the Paris Agreement's primary temperature goal of limiting warming to 1.5°C, contrary to what the Further Information states.

28. The APS pathway is designed to serve a specific analytical purpose within the IEA's Global Energy and Climate (GEC) model, where it illustrates the extent to which announced ambitions and targets are able to deliver the emissions reductions needed to achieve net zero by 2050[15]. The APS pathway models the energy systems that would result if countries fully implement their national energy and climate targets, on time and in full. It models the expected outcomes of announced targets, rather than imposing the physical and policy conditions required to achieve a specific temperature goal (as the Net Zero Emissions by 2050 Scenario (NZE) does[16]).

29. Therefore, while the APS is built on the assumption that all announced net-zero pledges are achieved, it is a statement of policy ambition fulfilled, and not necessarily a definitive energy-sector-only pathway to keep the temperature rise to 1.5°C. The difference between the APS and NZE scenario is often highlighted by the IEA as the "Ambition Gap"[17], the gap between governments' currently announced pledges and what is scientifically required to meet the 1.5 °C limit. As a result, it is not an appropriate pathway for assessing the significance of a project's scope 3 emissions in relation to the Paris Agreement, unlike the NZE pathway.

(v) <u>Inclusion of, and reliance on, irrelevant information</u>

30. We note that the Further Information refers to the use of the UK carbon budgets in an attempt to place Jackdaw's Scope 3 emissions in a national context. The use of UK carbon budgets to contextualise the Jackdaw Project's Scope 3 emissions is not an approach that is compatible with the Supplementary Guidance, which clearly states that "*the UK Carbon Budgets, under the Climate Change Act 2008, are based on UK territorial emissions and the concept of scopes is not directly relevant for carbon accounting for the purposes of domestic targets, which must count each unit of emissions once, and does not take into account where the emissions sit within the value chains of different organisations*"[18]. Furthermore, the Supplementary Guidance states that "*(…) the scope 3*

[14] International Energy Agency (IEA) World Energy Outlook 2024, p.232, fig. 5.26
[15] IEA Global Energy and Climate Model Documentation 2025, p.8
[16] IEA Global Energy and Climate Model Documentation 2025, p.7
[17] IEA World Energy Outlook 2021, p.33
[18] Department for Energy Security & Net Zero (DESNZ) (2025). Supplementary Guidance for Assessing the Effects of Downstream Scope 3 Emissions on Climate from Offshore Oils and Gas Projects, p.6.

emissions estimated to be produced by the project (…) should be evaluated in the context of a global baseline scenario of GHGs"[19].

31. A comparison of Jackdaw's Project estimated emissions against national emissions is also included: *"When the highest anticipated Jackdaw Scope 3 emissions are compared against national UK carbon targets, they comprise 1.89% of the total UK Nationally Determined Contribution (NDC) emission target for 2030".* A comparison against UK Nationally Determined Contribution emissions is irrelevant for the purposes of assessing Scope 3 emissions.

32. The significance of a project's downstream greenhouse gas (GHG) emissions should be assessed relative to the available space in the **remaining 1.5°C global carbon budget**, once existing and committed fields have been accounted for.

33. It should also be noted that the Climate Change Committee (**CCC**), which reports to Parliament on the UK's progress towards meeting carbon budgets, has highlighted that *"[e]xpansion of fossil fuel production is not in line with Net Zero*"[20]. The CCC acknowledges that "*[t]he UK will continue to need some oil and gas until it reaches Net Zero, but this does not in itself justify the development of new North Sea fields".* More recently, the CCC stated that "*continued reliance on fossil fuels undermines UK energy security*"[21].

(vi) <u>Misleading engagement with scientific evidence</u>

34. The Further Information concludes that "*Jackdaw Scope 3 emissions are within the Paris-aligned IEA APS and NZE scenarios. Jackdaw Scope 3 emissions are not considered to have a likely significant effect on the ability of States to meet global Paris-aligned emissions pathways that limit warming to 1.5°C and are therefore assessed as minor adverse and not significant in accordance with the significance matrix (Table 5-6).*" The IEA APS scenario is not Paris-aligned as already discussed (see section (iv)). The conclusion that the Jackdaw project is aligned with the IEA NZE scenario is an incorrect conclusion of flawed methodology (see section (i)), which is additionally highlighted by the IEA's own direct outcome of modelling the NZE pathway that no new oil and gas fields are approved for development after 2021.

35. The IEA core finding from modelling the NZE pathway is "*Beyond projects already committed as of 2021, there are* ***no new oil and gas fields approved for development in our pathway****, and no new coal mines or mine extensions are required"*[22]*.* More recent IEA reports state that "*The pace of decline in oil and gas demand in the 2030s may also mean*

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[19] As above, p.9.
[20] Climate Change Committee (CCC) (2023). Progress in reducing emissions: 2023 report to Parliament.
[21] CCC (2025). Progress in reducing emissions: 2025 report to Parliament
[22] IEA (2021) Net Zero by 2050 - A Roadmap for the Global Energy Sector p.21

that a number of high cost projects come to an end before they reach the end of their technical lifetimes."[23]

36. The IEA's NZE's conclusion has been widely recognised and is consistent with the findings from the majority of 1.5°C-aligned scenarios from IPCC's Sixth Assessment Report and from all major 1.5°C scenarios published by universities, intergovernmental organisations, companies, and consultancies. This conclusion was again confirmed in a peer-reviewed paper in *Science* co-authored by IISD experts[24].

(vii) Failure to identify, describe and assess all indirect significant effects of the project

37. The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020 (EIA Regulations) require Environmental Statements (ES) to contain prescribed information. Other than in relation to the climate, the Further Information does not investigate or in any way assess the indirect effects of GHG emissions on the factors identified in paragraph 5 of Schedule 6 to the EIA Regulations (i.e. population, human health, land, water, biodiversity (with particular emphasis on protected species and habitats), cultural heritage etc.) both in the UK and/or globally[25].

38. The European Court of Human Rights (**ECtHR**) recently held that Article 8 of the European Convention on Human Rights (**ECHR**) requires Contracting States to subject decisions on the extraction of petroleum to rigorous and comprehensive environmental impact assessment. States decision-making in the context of environmental impact assessment must be conducted "in good faith" and be "based on the best available science" before the authorisation of a potentially dangerous activity that may be harmful to the right for individuals to effective protection by the State authorities from serious adverse effects of climate change on their life, health, well-being and quality of life[26].

39. For petroleum production projects specifically, at the public authority level, there must be an assessment of whether the activity is compatible with States' obligations under national and international law to take effective measures against the adverse effects of climate change[27].

40. The ECtHR sets out clear expectations that environmental assessment must include the cumulative GHG emissions from all projects combined, as a project by project assessment is prohibited under the EIA Directive 2011/92/EU (**EIA Directive**)[28].

41. Furthermore, subsequent court cases have clarified that in order to be aligned with the EIA Directive, environmental impact assessment must assess whether the project is

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[23] IEA (2023). Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach [2024 revised edition] p. 76
[24] Navigating Energy Transitions: Mapping the road to 1.5°C | International Institute for Sustainable Development
[25] Offshore Oil and Gas Exploration, Production, Unloading and Storage, Environmental Impact Assessment Regulations 2020 (SI 2020/1497) (EIA Regulations).
[26] Greenpeace Nordic and Others v Norway [2025] ECHR no. 34068/21
[27] As above, note 26
[28] As above, note 26

compatible with the remaining 1.5°C degree carbon budget and assess the indirect effects of the GHG emissions on the factors listed under Article 3 of the EIA Directive.[29]

42. Overall, we conclude that the Further Information does not adequately or lawfully assess the likely significant environmental effects of the Jackdaw Project.

(vi) Misleading claims regarding energy security

43. The developer claims that "*the delivery of Jackdaw is critical to strengthening UK energy security by maximising domestic gas production*".[30] However, this is misleading given the relatively limited impact that gas from the Jackdaw Project would have on the UK's overall reliance on imported gas.

44. According to official projections, even if new North Sea fields such as the Jackdaw Project are developed, the UK's reliance on imported gas is set to rise from 55% today to more than two-thirds dependent by 2030, and over 90% dependent by 2050.[31] The Jackdaw Project itself has the potential to reduce annual gas import dependency by just 2% a year on average.[32]

45. Given the small amount of gas that the Jackdaw Project might produce, and the fact that the price of gas is set by international markets, the Jackdaw Project's gas would do next to nothing to reduce the UK's current vulnerability to global gas price shocks. As the IEA makes clear, "*new conventional field approvals cannot provide immediate relief for tight markets and may well make the later stages of the transition even more challenging*".[33]

46. Instead, the only way to lower bills, increase reliability and ensure energy security is to transition to clean energy made in the UK. This is further highlighted in the IEA's World Energy Outlook, which shows that a NZE Scenario can lead to the lowest household bills - in comparison to other scenarios - through greater efficiency and lower fuel costs and increases overall energy system resilience, among others.[34]

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[29] Borgarting Court of Appeal, Oslo, Case 24-036810ASD-BORG/02, 14th November 2025, para. 6.1.
[30] Jackdaw Field Development, p.1.
[31] Duhig H. *Why Trump is wrong on North Sea oil and gas*. Uplift. 23 July 2025.
[32] Duhig H, above note
[33] IEA (2023). *Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach* [2024 revised edition], p.77.
[34] International Energy Agency (IEA) (2025), *World Energy Outlook 2025*.

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22nd December 2025

Representation from the Weald Action Group regarding the Jackdaw Field Development (reference: D/4260/2021)

The Weald Action Group[1] is a coalition of community organisers from grassroots environmental groups campaigning against the onshore exploration and extraction of oil and gas across South England.

We, with Sarah Finch as the claimant, initiated the judicial review of the Horse Hill onshore oil development, Finch v. Surrey County Council ('Finch')[2], which led to the June 2024 Supreme Court judgment on the requirement to include downstream scope 3 impacts in environmental assessment for fossil fuel developments.

It was as a direct result of our success that the Court of Session ruled that the previous consent for the Jackdaw Field development was unlawful, and that Shell has had to submit new further information regarding an assessment of the climate effects of scope 3 emissions. We welcome this further opportunity to comment on this project.

This representation comments specifically on the document submitted by Shell in November 2025 entitled, "*Further Information required under DESNZ Regulation 12(1) Notices dated 21st July and 22nd September 2025 Part 1: Scope 3 Emissions Assessment*".

Our comments are as follows:

1. The emissions assessment fails to fully acknowledge the dire state of the climate

By not referring to the remaining global carbon budget the developer turns a blind eye to the extremely narrow window of opportunity that remains to hold global average temperature rise below 1.5°C and hence fails to acknowledge the dire state of the environment.

Figures from the Global Carbon Project budget 2025 shows that CO_2 emissions from fossil fuels will reach record highs of 31.8 gigatonnes (Gt) this year and that **the remaining carbon budget to have just a 50% chance of limiting global average temperature rise to 1.5°C – 170 Gt CO_2, equating to just four years of today's emissions – is virtually exhausted**[3].

[1] https://www.wealdactiongroup.org.uk/
[2] R (on the application of Finch on behalf of the Weald Action Group) v Surrey County Council and others [2024] UKSC 20. https://www.supremecourt.uk/cases/uksc-2022-0064
[3] Global Carbon Project. (2025). Supplemental data of Global Carbon Budget 2025 (Version 1.0) [Data set]. https://www.icos-cp.eu/science-and-impact/global-carbon-budget/2025 as reported here: Zeke Hausfather and Pierre Friedlingstein, 'Fossil-fuel CO2 emissions to set new record in 2025, as land sink "recovers"', Carbon Brief, 13 Nov. 2025. https://www.carbonbrief.org/analysis-fossil-fuel-co2-emissions-to-set-new-record-in-2025-as-land-sink-recovers/

2. The emissions assessment fails to place the Jackdaw Field's scope 3 emissions within a global cumulative emissions context

The Government's Supplementary Guidance for assessing the effects of downstream scope 3 emissions on climate from offshore oil and gas projects (Scope 3 Guidance) states (page 12), "*Given the global effect of GHG emissions, the ES must consider the cumulative effects of the proposed project with other existing and planned future projects, in a global context. If global reduction pathways are used to contextualise magnitude of emissions as above, this approach should be inherently cumulative, as these pathways take into account a wide range of existing and planned projects and other activities*"[4].

The emissions assessment presents the Jackdaw Field's scope 3 emissions as a proportion of the annual global emissions in the International Energy Agency (IEA) Announced Pledges Scenario (APS) and Net Zero Emissions by 2050 (NZE) scenario; the annual oil and gas emissions under these same scenarios; and the national carbon budget emissions. It seeks to justify this approach by claiming that (page 13), *"…these scenarios inherently include existing and planned hydrocarbon projects thereby ensuring that this assessment is cumulative*".

This approach is erroneous and inherently not cumulative. Any project can claim it is not significant when compared in this way – which is indeed the conclusion reached by Shell (page 31).

In adopting this approach, the developer has misinterpreted the Scope 3 Guidance. While the guidance emphasises the legal requirement for an assessment of cumulative effects of the project, it is not explicit on the methodology for doing so. It certainly does not 'determine' that using global or UK-focused reduction pathways provides a viable proxy for quantifying cumulative effects.

In fact the Scope 3 Guidance explicitly rejects this type of approach where it states (page 12), "*OPRED's current view is that characterising scope 3 emissions from a project solely in numeric terms against global GHG emissions would not on its own provide a meaningful expression of the global effect of those scope 3 emissions, because of the obvious difference in scale between individual projects and global emissions levels*"[5].

The IEAs modelling framework shares many features with Integrated Assessment Models (IAMs) which are used to construct emissions pathways, but the developer has misunderstood how IAMs are built. In broad terms, the level of oil and gas demand projected in an IAM scenario reflects the desired outcome of the model which will be subject to a range of constraints and assumptions (e.g. emissions limits consistent with a temperature target, the size of the energy service demand, supply-side limitations etc.). They are not forecasts of what fossil fuels are going to be extracted.

For example, the IEA NZE scenario itself does not include new oil and gas projects beyond those already approved in 2021[6] and the IEA has recently reiterated that to keep global average

[4] https://assets.publishing.service.gov.uk/media/6853fa3d1203c00468ba2b15/Supplementary_guidance_-_Effects_of_Scope_3_Emissions.pdf
[5] Ibid.
[6] See page 21: https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf

temperature rise 1.5°C requires no new investment in oil and gas[7]. Indeed, the 2022 International Institute for Sustainable Development report found that there was a large consensus across all published studies that developing new oil and gas fields was incompatible with the Paris Agreement 1.5°C target[8].

In short, the developer has not used modelled pathways in a way that identifies the proportion of production that originates from existing or approved oil and gas fields, as opposed to new developments. Consequently, they have not placed the Jackdaw Field's scope 3 emissions within a broader global cumulative context.

A robust approach to assessing the significance of the Scope 3 emissions from the Jackdaw Field development - within a cumulative global emissions context - would be to assess these emissions relative to the available space in the remaining 1.5°C aligned global carbon budget, once the emissions from existing and committed fossil fuel projects have been accounted for.

For context, the peer reviewed study by Trout et al. in 2022 **forecast that emissions from the burning of the oil, gas and coal in already operating or under development fossil fuel-producing infrastructure equates to 936Gt CO_2 (around 446Gt CO_2 from coal, 323Gt CO_2 from oil and 165Gt CO_2 from gas)**[9]. One of the conclusions of this study was that "*staying within a 1.5°C carbon budget (50% probability) implies leaving almost 40% of 'developed reserves' of fossil fuels unextracted*".

In addition, the 2023 IPCC report stated (page 58): "*Projected cumulative future CO2 emissions over the lifetime of existing fossil fuel infrastructure without additional abatement exceed the total cumulative net CO2 emissions in pathways that limit warming to 1.5°C (>50%) with no or limited overshoot*"[10].

3. The emissions assessment draws erroneous conclusions regarding the significance of the Scope 3 emissions on the climate

The flawed approach to the assessment of significance of Scope 3 emissions has inevitably led to the false conclusion drawn by the developer that (page 31), "*in global and national Paris-aligned emissions pathways, the effect of the Jackdaw Scope 3 emissions on climate is not significant*".

The Institute of Environmental Management and Assessment's 2022 guidance, Assessing Greenhouse Gas Emissions and Evaluating their Significance (IEMA Guidance) lays out three principles regarding significance the last of which is (page 23)[11]:

"*GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered to be significant*".

Footnote 31, linked to this principle clarifies (page 23):

[7] https://www.carbonbrief.org/iea-reiterates-no-new-oil-and-gas-needed-if-global-warming-is-limited-to-1-5c/
[8] https://www.iisd.org/system/files/2022-10/navigating-energy-transitions-mapping-road-to-1.5.pdf
[9] https://iopscience.iop.org/article/10.1088/1748-9326/ac6228
[10] https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf
[11] https://www.iema.net/media/xmgpoopk/2022_iema_greenhouse_gas_guidance_eia.pdf

"*There is a global GHG emission budget that defines a level of dangerous climate change, and any GHG emission that contributes to exceedance of that budget or threatens efforts to stay within it can be considered as significant*".

The world's climate is approaching this "*environmental limit*" at breakneck speed. To reiterate - the remaining global carbon budget with a 50% chance of keeping global average temperature rise to 1.5°C currently stands at around 170Gt CO_2. There is now no shortage of evidence (see examples in section 2) which shows that the emissions from already operational or under development fossil fuel infrastructure exceeds this budget several times over.

To sum up - there is zero space in the rapidly dwindling global carbon budget within Paris-aligned 1.5°C pathways, for any new fossil fuel developments; and a massive excess of emissions from existing oil, gas and coal infrastructure which will now need to close before the end of its economic life.

The 35.8 Mt CO2eq emissions from the Jackdaw Field development will be additional, cumulative and hence contribute to the further exceedance of the global carbon budget. As such, and based on established guidance, these emissions must be considered as significant for the climate.

4. The emissions assessment fails to assess the actual effects of the Scope 3 emissions

Shell has made no attempt to assess the actual effects of the 35.8 Mt CO2eq emissions that will result from the Jackdaw Field development. The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020[12] (the EIA Regulations) require (Schedule 5, para 3) the assessment of a project's "*effects*" on listed factors including population and human health; biodiversity, with particular attention to species and habitats protected under any law of any part of the United Kingdom; land, soil, water, air and climate; any impact on the environment in other countries; and more. It also includes the "*cumulation of the impact with the impact of other existing or approved projects*".

The Supreme Court ruling in Finch stressed the need for "*comprehensive and high-quality information about the likely significant environmental effects of a project*"[13].

The Finch ruling also refers to the case Squire v Shropshire Council [2019][14], which concerned the grant of planning permission for a facility for the intensive rearing of chickens. A by-product of the planned activity would be the production of substantial quantities of poultry manure, which was to be spread as fertiliser on agricultural land in the local area. The Court of Appeal held that the EIA for the project was deficient and unlawful because it did not include a proper assessment of indirect environmental effects of the proposed development in the form of smell and dust that would emanate from the storage and spreading of the manure. The floods, storms, health impacts, etc, that would arise from the warming effect of the carbon emissions from the Jackdaw Field development are equivalent to the dust and smells in Squire.

[12] https://www.legislation.gov.uk/uksi/2020/1497
[13] Finch v Surrey County Council, para. 153.
[14] Ibid., para. 160.

The Regulations therefore require an assessment not just of the amount of greenhouse gas emissions a development will contribute to, but also how those emissions will affect the factors mentioned.

Furthermore, the European Court of Human Rights, in its very recent judgment on the case Greenpeace Nordic and Others v. Norway on 28 October 2025[15], ruled that approving oil and gas field development without comprehensively assessing the impacts on life and health from all emissions is prohibited under fundamental human rights.

The linear relationship between greenhouse gas emissions and increased global average temperatures mean that such impacts can be estimated with confidence. The IPCC reports that 1,000 Gt CO_2 emissions causes a best estimate of 0.45°C of increased global surface temperature[16]. A study published in Nature Climate Change in 2023 similarly concludes that 100 Gt of CO_2e emissions causes an increase of global temperatures of 0.05°C[17].

The information on temperature rise can be used in combination with the numerous attribution studies that have been published to estimate the effects – such as reduction in sea ice, reduction in snow cover, increased rainfall, likelihood of droughts, fires and floods, and human mortality – from given volumes of greenhouse gas emissions[18].

For example, in the case of mortality, a 2021 paper published in Nature drew on public health studies to conclude that for every 4,434 metric tonnes of CO2 pumped into the atmosphere beyond the 2020 rate of emissions, one person globally will die prematurely from the increased temperature[19].

5. The emissions assessment does not comply with the Scope 3 Guidance, the IEMA Guidance or the EIA Regulations

The emissions assessment is inherently flawed. It does not comply with the Scope 3 Guidance, the IEMA Guidance or the EIA Regulations and cannot be relied on to justify the Jackdaw Field

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[15] European Court of Human Rights, Greenpeace Nordic and Others v. Norway. https://hudoc.echr.coe.int/eng?i=001-245561

[16] Valérie Masson-Delmotte et al., 'Summary for Policymakers', in Climate Change 2021: The Physical Science Basis, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, IPCC, 2021, page 28, para. D.1.1. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf

[17] Lamboll, R.D., Nicholls, Z.R.J., Smith, C.J. et al. 'Assessing the size and uncertainty of remaining carbon budgets', Nature Climate Change, vol. 13, pp. 1360–1367, 2023. https://doi.org/10.1038/s41558-023-01848-5

[18] For example, Dirk Notz and Julienne Stroeve, 'Observed Arctic sea-ice loss directly follows anthropogenic CO2 emissions', Science 354: 6363, 2016, p. 747, https://doi.org/10.1126/science.aag2345; Mika Rantanen et al., 'The Arctic has warmed nearly four times faster than the globe since 1979', Communications Earth & Environment, vol. 3, 2022, https://doi.org/10.1038/s43247-022-00498-3; Wim Thiery et al., 'Intergenerational inequities in exposure to climate extremes', Science 374: 6564 pp. 158–160, 2021. https://doi.org/10.1126/science.abi7339;R. Daniel Bressler, 'The mortality cost of carbon', Nature Communications, vol. 12, 2021, https://doi.org/10.1038/s41467-021-24487-w; A. M. Vicedo-Cabrera et al., The burden of heat-related mortality attributable to recent human-induced climate change, Nature Climate Change, vol 11, 2021, p. 492–500, https://doi.org/10.1038/s41558-021-01058-x; IPCC, 'Summary for Policymakers', in Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, 2023

[19] R. Daniel Bressler, 'The mortality cost of carbon', Nature Communications, vol. 12, 2021, https://doi.org/10.1038/s41467-021-24487-w

development. Indeed, the science is clear. If we are to have even the slightest chance of avoiding the very worst impacts of climate change, there can be no new fossil fuel developments.

Furthermore, we now have an authoritative legal opinion regarding the obligations of states in respect of climate change. Earlier this year the International Court of Justice confirmed that the duty of States to prevent activities from causing significant harm to the environment and to act with due diligence applied to the climate system[20]. Failure to prevent such activities – such as through the continued allowance of fossil fuel exploration, production, consumption or subsidies – may constitute an internationally wrongful act.

6. The UK government must act with due diligence and not approve the Jackdaw Field development

If the Jackdaw Field development goes ahead there can be no doubt that it will cause significant harm to the climate system. **The UK government must act with due diligence and not approve this development.** To do otherwise ignores the scientific consensus that new fossil fuel projects are incompatible with the 1.5°C target, runs counter to the government's new objective for the North Sea, "*to take a globally standard-setting, 1.5°C and climate science-aligned approach to future oil and gas production*"[21] and puts the UK at legal risk.

[20] International Court of Justice, Advisory Opinion on the Obligations of States in respect of Climate Change, 7 July 2025. https://www.icj-cij.org/case/187

[21] Department for Energy Security & Net Zero, Building the North Sea's Energy Future: Consultation, March 2025. https://assets.publishing.service.gov.uk/media/67d0005ed107f3a16e028796/building-the-north-sea Energy-future-consultation.pdf

J0005

Jackdaw gas field D/4260/2021

1. Please accept this as a response to the public consultation on Jackdaw Field Development, OPRED reference D/4260/2021, authored by [redacted] on behalf of community group Wanstead Climate Action.
2. The Shell/Adura document 'Jackdaw Field Development: Further Information required under DESNZ Regulation 12(1) Notices dated 21st July and 22nd September 2025: Part 1: Scope 3 Emissions Assessment'[1] does not provide sufficient context or information to evaluate environmental effects of Scope 3 greenhouse gas (GHG) emissions.
   2.a. Similar to the responses in relation to Rosebank oil field, also now operated by Adura, this failure may be owing to inexperience with requirements as interpreted in the Finch judgement and guidance; or an attempt to avoid considering the requirements; or to avoid having them them considered by the Secretary of State.
   2.b. The DESNZ notice dated 21 July 2025 required an 'assessment of the *effects* of downstream scope 3 emissions' and secondly a 'revised and updated assessment of the likely significant effects of the project on the environment that is *not limited to* downstream scope 3 emissions' (emphases added). An assessment of the environmental effects of scope 3 emissions was required, but appears in neither the 'Part 1' document, nor in the 'Part 2: Updated Assessment of the Project' which is really a list of changes to the Feb 2022 ES that does not include the change to include Scope 3. The first sentence of Part 2 says it is 'not limited' to Scope 3, when it would be correct to say it entirely ignores Scope 3 and the Court of Session judgement.
3. Neither as far as we can see do the new Jackdaw documents satisfy the 'Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020', schedule 6[2]. That schedule is very similar to the regulations assessed by judges in the Finch case in referring to 'indirect, secondary, cumulative … and long-term' effects. In particular, paragraph 4 of that schedule requires the environmental statement contain 'an assessment of the likely significant effects of the project on the environment, including those *resulting from* ... (f) the impact of the project on climate'. The Jackdaw documents do not contain this.
4. While Jackdaw is considerably smaller than the extremely damaging Rosebank, and probably mostly methane, it is important to explicitly emphasise the following: even accounting for substitution of production elsewhere (not considered in guidance, but conceivably relevant to IEMA methodology, s6.1) and liquefaction and transport overheads of LNG imports ostensibly offset by domestic production, project approval would add considerably to global CO_2 emissions on the order of tens of millions of tonnes[3], at a point where the world is passing both targets and tipping points.
5. The Shell/Adura document erroneously describes the project's GHG emissions as 'minor adverse and not significant'. As an example of how the high estimate of 35,823,000 tonnes of downstream CO_2 emissions is patently significant, it equates to approximately **9,000 human deaths** from climate effects before 2100, according to the IPCC-derived 'mortality cost of carbon'[4] or 'thousand tonne rule'[5].

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1 https://assets.publishing.service.gov.uk/media/69203f99cf3db184075cfd90/Further_Information_Part_1_-_Scope_3_Emissions_Assessment.pdf

2 https://www.legislation.gov.uk/uksi/2020/1497/schedule/6

3 Muttitt et al (2025), op cit.

4 Bressler, R.D. The mortality cost of carbon. *Nat Commun* **12**, 4467 (2021). https://doi.org/10.1038/s41467-021-24487-w

5 Pearce JM, Parncutt R. Quantifying Global Greenhouse Gas Emissions in Human Deaths to Guide Energy Policy. Energies. 2023; 16(16):6074. https://doi.org/10.3390/en16166074 See also Pearce JM, Parncutt R. Quantifying Global Greenhouse Gas Emissions in Human Deaths to Guide Energy Policy. *Energies*. 2023; 16(16):6074. https://doi.org/10.3390/en16166074

6. That is just an example of likely indirect significant effects resulting from the project's impact on climate that have been omitted. The work to provide adequate information to inform the Secretary of State's decision, if it has been done, has not been done by Shell/Adura nor apparently by its consultants. OPRED's supplementary guidance refers to IPCC (2023), the Synthesis Report that also summarises indirect environmental effects of GHG emissions, including ocean acidification, droughts and continuing 'substantial damages, and increasingly irreversible losses, in terrestrial, freshwater, cryospheric, and coastal and open ocean ecosystems … risks of species extinction or irreversible loss of biodiversity'. Local damages from the Jackdaw project, not mediated by carbon flows from rock, would include discharges to sea, effects on harbour porpoises, Minke whales, hazards to fish, shellfish aquaculture, seabirds and shoreline sediment. However, if you downscale the loss of coral reefs between 1.5 and 2.0 °C, the Scope 3 emissions of Jackdaw would result in the destruction of something of the order of **13 km² of coral habita**t.[6] To understand the full environmental effects of a project like Jackdaw necessarily requires looking at global ecosystem effects under a variety of plausible emission scenarios, as well as estimating statistical expectation of damages from tipping points such as Amazon dieback and loss of glacier-fed ecosystems.
   6.a. Such an assessment as DESNZ/OPRED required is possible, as has been shown by a 2025 assessment of a gas project in Australia.[7]
7. The guidance referred to IEMA GHG assessment guidance *Assessing Greenhouse Gas Emissions and Evaluating their Significance*, as do the Jackdaw and Rosebank documents. However, we do not believe they are following IEMA. S6.1 says 'GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit, as such any GHG emissions or reductions from a project might be considered to be significant'. This has been ignored when the documents do not consider huge emissions to be significant. If the 2017 version confirmed HS2 has significant climate effects, how is conceivable that North Sea O&G projects have not?
   7.a. IEMA says 'The consequences of a changing climate have the potential to lead to significant environmental effects on all topics in the EIA Directive (e.g. human health, biodiversity, water, land use, air quality)'. Again, the Shell/Adura documents entirely ignore the IEMA guidance.
8. The document misleadingly implies that the development aligns with Paris Agreement aligned production pathways. Even if it is predicated on all other fossil fuel developments being halted (which would not in any case be in line with the guidance of the assessment being 'cumulative'), this would be false. It also refers to 'frameworks like the Paris Agreement which aim to limit warming to below 2°C' which is a misrepresentation of the Paris Agreement which refers to '**well below** 2 °C' and the World Court ruled in July[8] that the primary temperature goal is the 1.5 °C target.
   8.a. Global gas production is already projected to be nearly double, 92% higher, than is compatible with the primary Paris target.[9]
9. The Government's 'Building the North Sea's Energy Future' document, which looks forward to just transition led by communities and workers with good, sustainable jobs and a healthier, fairer, prosperous future, also has an objective 'to take a globally standard-setting, **1.5°C** and climate science-aligned approach to future oil and gas production'. That objective translates globally into shutting down at least 60% of active extraction, and

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6 Estimates of global shallow coral in Lyons et al (2024) https://doi.org/10.1016/j.crsus.2024.100015. See also IPCC (2018)

7 Perkins-Kirkpatrick et al, 'For the first time, we linked a new fossil fuel project to hundreds of deaths. Here's the impact of Woodside's Scarborough gas project' https://theconversation.com/for-the-first-time-we-linked-a-new-fossil-fuel-project-to-hundreds-of-deaths-heres-the-impact-of-woodsides-scarborough-gas-project-266060

8 Carbon Brief, 25 July https://www.carbonbrief.org/icj-what-the-world-courts-landmark-opinion-means-for-climate-change/

9 SEI/UNEP Production Gap Report (2025) https://productiongap.org/2025report/

certainly not adding any more.[10] Existing fields in production are already breaching the Paris targets, so in no way is new oil aligned with Paris.

10. The total amount of known, unexploited fossil reserves, including Rosebank and Jackdaw, is around 3.5 trillion tonnes of CO_2, or another 'trillionth tonne' of carbon. That vastly exceeds the above thresholds.[11] Were there any general rule to permit fields such as Jackdaw, warming would almost certainly exceed 3 °C above pre-industrial.
11. The IPCC's 'reasons for concern' ('burning embers') figures have been showing increasing perception of risk, and since the Paris Agreement there is new knowledge of the range of catastrophic tipping points, including Amazon dieback, ocean current collapse and metres of locked-in sea-level rise, beyond 1.5 °C.[12] A long-term tipping point resulting in mass extinction has been estimated Prof Daniel Rothman of MIT at roughly the amount of fossil fuel emissions corresponding to 2 °C.[13]
    11.a. The report has 'temperature highlighted as the key climate indicator', but it isn't really an environmental assessment; IPCC, especially WG2, also covers ocean acidification, while hydrological and ecological effects are non-linear and not properly represented by context-free, scalar temperature changes.
12. Various estimates have been made about the point when construction of new fossil fuel infrastructure must cease, from 2017 on, based on remaining carbon budgets[14] and expected lifetime of investments, such as the IEA's 2021.[15] So far as we know, all credible estimates are now passed, confirming that permitting new development would breach international climate commitments. Note that those commitments are independent of domestic NDCs or the concerns of CCC carbon budgets confusingly invoked in the 'executive summary'. In terms of global cumulative emissions, approving Jackdaw would not be consistent with a categorical imperative of the temperature targets, spelled out in detail by the UCL Bartlett report.[16]
13. Figure 3-2 on page 12 incidentally illustrates the 'slippery slope' hazard of permitting what are initially thought to be a limited number of new developments. The necessary peak to emissions is constantly being deferred, adding to global emissions. There is widespread ignorance that the IPCC had said the peak must be by 2025.[17]
14. The supplementary guidance rightly says 'characterising scope 3 emissions from a project solely in numeric terms against global GHG emissions would not on its own provide a meaningful expression of the global effect of those scope 3 emissions, because of the obvious difference in scale between individual projects and global emissions level'. Nevertheless, this is what the operator has presented, so that the assessment in meaningless. In presenting 'an assessment of scope 3 emissions in relation to the current state of climate and global emissions-reduction pathways' 23.6-35.8 $MtCO_2$ is significant when future baselines in those pathways exceed targets. Note that Shell ignores the examination of mitigation, merely mentioning possibility of CCS, without addressing a possible condition of 100% carbon takeback obligation.
15. Were government agencies to request a proper assessment with adequate information from Adura, it would not change the facts, just make them more obvious now that Scope 3

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10 https://oilchange.org/blogs/shut-down-60-percent-existing-fossil-fuel-extraction-1-5c/ That was a 2023 assessment so the 60% figure for early retirement will now be higher.

11 https://carbontracker.org/finally-we-have-a-global-registry-of-fossil-fuels/

12 Eg Armstrong McKay et al (2022) https://doi.org/10.1126/science.abn7950 See also risk assessments by University of Exeter and the Institute and Faculty of Actuaries https://global-tipping-points.org/risk-dashboard/

13 Rothman (2017) https://doi.org/10.1126/sciadv.1700906#F4 See his 2019 paper for mechanism.

14 For example, Forster et al (2025) https://essd.copernicus.org/articles/17/2641/2025/

15 https://www.theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist

16 Muttitt et al, 'The Climate Implications of New Oil and Gas Fields in the UK', July 2025. https://www.ucl.ac.uk/policy-lab/sites/policy_lab/files/report-climate_implications_pages_online.pdf

17 Kenny and Geese (2025) 'We surveyed British MPs – most don't know how urgent climate action is' https://theconversation.com/we-surveyed-british-mps-most-dont-know-how-urgent-climate-action-is-266703

emissions are to be considered in environmental effects. Project approval always been conditional on this environmental assessment and on conditions which have changed since 2022.

16. If the Secretary of State's decision accepts tens of thousands of deaths and enormous, if distributed, environmental destruction as a result of granting consent; and a global policy compatible with such decisions that would result in around 3 °C of global warming and the consequent extreme risks of passing tipping points and mass extinction; and decides that habitability of the biosphere for future generations is not a concern either, then in our opinion it should make all that explicit to the public. Otherwise, the logical consequence is that Jackdaw must not proceed. This is a time to stand up for environmental regulation in the light of new knowledge and law. We look forward to the government drawing a clear line under new oil and gas.

J0006

Dear [],

Thank you for the opportunity top comment on the additional information regarding the emissions assessment.

As far as I am aware, this additional information does not change the significance of the impact on the shipping and safe navigation considerations. We therefore have no further comments to make on this occasion.

Kind regards

[]

Maritime & Coastguard Agency

J0007

Good morning,

NLB have no comment to provide with regard to navigational safety, relating to the additional information provided for the Jackdaw Field Development Environmental Statement, D/4260/2021.

Regards

[]

Northern Lighthouse Board

Marine Directorate

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Scottish Government
Riaghaltas na h-Alba

DESNZ
OPRED
Aberdeen

SCOTTISH GOVERNMENT, MARINE DIRECTORATE (SGMD) RESPONSE

D/4260/2021 - SHELL - Jackdaw Field Development Further Information - Environmental Statement

Thank you for the opportunity to comment on D/4260/2021 - SHELL - Jackdaw Field Development Further Information - Environmental Statement.

SGMD advise the application should meet the requirements and recommendations of:

- The Offshore Oil and Gas Exploration, Production, Unloading and Storage (Environmental Impact Assessment) Regulations 2020 - (https://www.legislation.gov.uk/uksi/2020/1497/introduction/made).

- The Petroleum Act 1998 (as amended) (https://www.legislation.gov.uk/ukpga/1998/17/contents).

Associated Guidance Documents:

- (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005109/The_Offshore_Oil_and_Gas_Exploration__Production__Unloading_and_Storage__Environmental_Impact_Assessment__Regulations_2020_-_A_Guide__July_2021.pdf) and

- (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/760560/Decom_Guidance_Notes_November_2018.pdf)

SGMD also advise the application should consider how the proposed works comply with Scotland's National Marine Plan, which was published in March 2015, in accordance with the Marine (Scotland) Act 2010. The Plan provides a comprehensive overarching framework for all marine activity in our waters. It enables sustainable development and use of Scotland's marine area in a way which will protect and enhance the marine environment whilst promoting both existing and emerging industries. Further information regarding Scotland's National Marine Plan can be found here: https://www.gov.scot/publications/scotlands-national-marine-plan/.

Discharges and Emissions

SGMD advise the site-specific modelling should provide the best understanding of the potential fate and impact of discharges / emissions. Where an assessment is not based on site specific modelling, SGMD recommend DESNZ satisfy themselves that studies used to support the impact assessment are comparable to the operation being undertaken.

Where cement deposits are expected at the seabed, SGMD advise that DESNZ ensure such deposits will not pose a future hazard to other sea users or impact the ability to decommission adjacent infrastructure.

Fish Spawning

If the operation is within or up to 1 km away from:

- A spawning area of a vulnerable benthic spawning species (sandeel / herring (1) or;

- An occasional / recurrent cod spawning area (1) and
- Sediments at the site are considered suitable for that species (Cod: coarse sand (2) herring: gravel, sandy gravel and gravely sand(1) and Sandeel: fines content of less than 10% (3)).

As defined by the following reports:

- (1) Coull, K.A., Johnstone, R., and S.I. Rogers. 1998. Fisheries Sensitivity Maps in British Waters. Published and distributed by UKOOA Ltd (https://www.cefas.co.uk/media/o0fgfobd/sensi_maps.pdf);
- (1) Ellis, J.R., Milligan, S.P., Readdy, L.,Taylor, N. and Brown, M.J. 2012. Spawning and nursery grounds of selected fish species in UK waters. *Sci. Ser. Tech. Rep*., Cefas Lowestoft, 147: 56 pp. (https://www.cefas.co.uk/publications/techrep/TechRep147.pdf);
- (1) Aires, C., González-Irusta, J.M., Watret, R. (2014) Updating Fisheries Sensitivity Maps in British Waters. *Scottish Marine and Freshwater Science*, Vol 5 No 10. Edinburgh: Scottish Government, 88pp. DOI: 10.7489/1555-1 (https://www.gov.scot/publications/scottish-marine-freshwater-science-volume-5-number-10-updating-fisheries/documents/);
- (1) Boyle, G., New, P ., 2018. ORJIP Impacts from Piling on Fish at Offshore Wind Sites: Collating Population Information, *Gap Analysis and Appraisal of Mitigation Options Collision and Avoidance Study*. Final report – June 2018. The Carbon Trust. United Kingdom. 247 pp (https://www.carbontrust.com/news-and-events/news/new-research-provides-clarity-on-fish-spawning-hotspots-near-offshore-wind).
- (2) As defined by José M. González-Irusta, Peter J. Wright, Spawning grounds of Atlantic cod (Gadus morhua) in the North Sea , *ICES Journal of Marine Science,* Volume 73, Issue 2, January/February 2016, Pages 304–315, (https://doi.org/10.1093/icesjms/fsv180).
- (3) NatureScot Commissioned Report 771: A review of the recovery potential and influencing factors of relevance to the management of habitats and species within Marine Protected Areas around Scotland (NatureScot Commissioned Report 771: A review of the recovery potential and influencing factors of relevance to the management of habitats and species within Marine Protected Areas around Scotland | NatureScot).

SGMD also recommend considering the following resources when assessing effects on gadoids and elasmobranchs:

- José M. González-Irusta, Peter J. Wright, Spawning grounds of Atlantic cod (*Gadus morhua*) in the North Sea , *ICES Journal of Marine Science*, Volume 73, Issue 2, January/February 2016, Pages 304–315, https://doi.org/10.1093/icesjms/fsv180
- González-Irusta, José & Wright, Peter. (2017). Spawning grounds of whiting (Merlangius merlangus). *Fisheries Research.* 195. 141-151. 10.1016/j.fishres.2017.07.005.
- González-Irusta, José & Wright, Peter. (2016). Spawning grounds of haddock (Melanogrammus aeglefinus) in the North Sea and West of Scotland. *Fisheries Research*. 183. 180-191. 10.1016/j.fishres.2016.05.028.
- Régnier, T., Gibb, F.M., Clarke, J., Langton, R., Kinnear, S. and Boulcott, P. 2024. Elasmobranch distributions and interactions with fisheries. NatureScot Research Report 1365).

SGMD recommend the timing of the operation is moved out-with the spawning period for that species or that DESNZ satisfy themselves the operator has demonstrated that spawning stock level impacts are not likely, taking account of associated cumulative impacts.

If the operation is more than 1 km from a vulnerable benthic spawning species (sandeel / herring) spawning area or an occasional / recurrent cod spawning area, or the operator has demonstrated that the sediment type at the site is not suited to the spawning of the species of concern, SGMD have no specific concerns.

Commercial Fishing:

SGMD advise operators should demonstrate that the installation or removal of infrastructure will not significantly impact commercial fishing operations or pose a hazard to other sea users.

In order to demonstrate the nature and scale of fishing activity in the area, SGMD advise reference to the following data sources:

- Finalised Scottish Government fisheries statistics for 2024 (October 2024). Operators are advised to refer to the combined Excel spreadsheets which include statistics for 2020 - 2024. (Scottish Sea Fisheries Statistics 2024 - gov.scot);
- Map layers on the National Marine Plan interactive (http://marine.gov.scot/node/12674) for the following:
  1. Tonnage for demersal, pelagic and shellfish species;
  2. Value (£) for demersal, pelagic and shellfish species;

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3. Effort (days) (by UK vessels >10m length) for demersal active (bottom trawls, dredges etc.); pelagic active (pelagic trawls, purse seines etc.); and passive (pots/creels, gillnets etc.).

- ICES Working Group on Spatial Fisheries Data (WGSFD; outputs from 2021 meeting) – (Item - Working Group on Spatial Fisheries Data (WGSFD; outputs from 2021 meeting) - International Council for the Exploration of the Sea - Figshare)
- Map layers showing average annual fishing effort (mW fishing hours) in the Greater North Sea Ecoregion during 2015–2018 are also available via EMODNET (https://www.emodnet-humanactivities.eu/view-data.php).

Aquaculture and Shellfish Water Protected Areas

Where modelling demonstrates the possibility of oil reaching the Scottish coastline, if an accidental event were to occur, SGMD advise that DESNZ ensure impacts on aquaculture and Shellfish Water Protected Areas are considered. The following resources are advised:

- The National Marine Plan Interactive (https://marinescotland.atkinsgeospatial.com/nmpi/):
- Shellfish Water Protected Areas (https://www.gov.scot/policies/water/protected-waters/);
- Scotland's Aquaculture website (Aquaculture Map | Scotland's Aquaculture):
- The Scottish Shellfish Farm Production Survey 2024 (Scottish Shellfish Farm Production Survey 2024 - gov.scot) (These statistics are usually published in May each year);
- The Scottish Finfish Farm Production Survey 2024 (Scottish Fish Farm Production Survey 2024 - gov.scot) (These statistics are usually published in September each year).

SGMD do not provide advice on impacts from oil and gas activities to designated conservation sites, marine mammals, seabirds, accidental events, noise or greenhouse gas or methane emissions. SGMD may provide further and/or bespoke advice relevant to Marine Scotland's interests in response to future applications associated with this development / field.

Any further correspondence relating to this response should be directed to MS.PON15@gov.scot.

Regards

Scottish Government, Marine Directorate
15 December 2025

J0009

Good morning [],

It appears that a response was not previously issued in December 2025 to the additional information submitted.

Thank you for your email regarding D/4260/2021 - Jackdaw Field Development.

I can confirm that, following review of the information provided, the MOD has no objection to the project.

Kind Regards

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DIO Head Office