Technical Appendix

# Lairdmannoch Energy Park

## Technical Appendix 2-1: EIA Scoping Opinion

Lairdmannoch Energy Park Limited

May 2025

Scottish Government
Riaghaltas na h-Alba
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**The Scottish Government**
**Energy Consents Unit**

# Scoping Opinion on behalf of Scottish Ministers under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

**Lairdmannoch Energy Park**
**Lairdmannoch Enery Park Ltd**

**18/01/2024**

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## 1. Introduction

1.1 This scoping opinion is issued by the Scottish Government Energy Consents Unit on behalf of the Scottish Ministers to Lairdmannoch Energy Park Ltd a company incorporated under the Companies Acts with company number SC714903 and having its registered office at Wind 2 Office, 2 Walker Street, Edinburgh, Midlothian, Scotland, EH3 7LA ("the Company") in response to a request dated 13th August 2023 for a scoping opinion under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 in relation to the proposed Lairdmannoch Energy Park ("the proposed development"). The request was accompanied by a scoping report completed by Atmos Consulting Ltd, an associated company of Lairdmannoch Energy Park Ltd.

1.2 The proposed development would be located 7 km north east of Gatehouse of Fleet and 10 km west of Castle Douglas in Dumfries and Galloway.

1.3 The proposed development is anticipated to comprise up to 9 wind turbines, each with blade tip height up to 180 m, and will have a generating capacity of up to approximately 60 MW. It would also consist of solar photovoltaic (PV) panels with a generating capacity of approximately 20MW plus a battery energy storage system of 20 MW. The total estimated capacity of the proposed development is therefore anticipated to be 100 MW.

1.4 In addition to the turbines, solar PV panels and battery energy storage system there would be ancillary infrastructure including:

- Extraction of aggregate for access track, hard-standings and turbine base construction (If borrow pits are utilised);
- Construction of new access tracks to reach the turbine and solar panel locations;
- Construction of temporary hardstanding;
- Construction of turbine foundation and crane hardstanding;
- Excavation of trenches and cable laying;
- Commissioning of equipment

1.5 The Company indicates the proposed development would be decommissioned after 40 years and the site restored in accordance with the decommissioning and restoration plan.

1.6 The proposed development is solely within the planning authority of Dumfries and Galloway Council.

## 2. Consultation

2.1 Following the scoping opinion request a list of consultees was agreed between Atmos Consulting Ltd (acting as the Company's agent) and the Energy Consents Unit. A consultation on the scoping report was undertaken by the Scottish Ministers and this commenced on 23rd August 2023. The consultation closed on 13th September 2023. Extensions to this deadline were granted to:-

- Dumfries and Galloway Council;
- NatureScot;
- Historic Environment Scotland (HES);
- Defence Infrastructure Organisation (DIO) on behalf of Ministry of Defence (MOD);
- RSPB Scotland;
- Scottish Rights of Way and Access Society (Scotways); and
- Kelton Community Council.

The Scottish Ministers also requested responses from their internal advisors Transport Scotland and Scottish Forestry, although Scottish Forestry did not provide a response. Standing advice from Marine Directorate – Science Evidence Data and Digital (MD-SEDD) has been provided with requirements to complete a checklist prior to the submission of the application for consent under section 36 of the Electricity Act 1989. All consultation responses received, and the standing advice from MD-SEDD, are attached in ***ANNEX A Consultation responses*** and ***ANNEX B MD-SEDD Standing Advice.***

2.2 The purpose of the consultation was to obtain scoping advice from each consultee on environmental matters within their remit. Responses from consultees and advisors, including the standing advice from MD-SEDD, should be read in full for detailed requirements and for comprehensive guidance, advice and, where appropriate, templates for preparation of the Environmental Impact Assessment (EIA) report.

2.3 Unless stated to the contrary in this scoping opinion, Scottish Ministers expect the EIA report to include all matters raised in responses from the consultees and advisors.

2.4 The following organisations were consulted but did not provide a response:

- British Horse Society
- Civil Aviation Authority - Airspace
- Crown Estate Scotland
- Nith District Salmon Fisheries Board
- Fisheries Management Scotland
- John Muir Trust

- Mobile Broadband Network Ltd
- Motorola Solutions
- Mountaineering Scotland
- Oban Airport
- Scotways
- Scottish Wildlife Trust
- Scottish Wild Land Group
- Visit Scotland
- Borgue Community Council
- Castle Douglas Community Council
- Gatehouse of Fleet Community Council
- Kelton Community Council
- Kirkcudbright Development Trust
- Royal Burgh of Kirkcudbright and District Community Council

2.5 With regard to those consultees who did not respond, it is assumed that they have no comment to make on the scoping report, however each would be consulted again in the event that an application for section 36 consent is submitted subsequent to this EIA scoping opinion.

2.6 The Scottish Ministers are satisfied that the requirements for consultation set out in Regulation 12(4) of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 have been met.

3. The Scoping Opinion

3.1 This scoping opinion has been adopted following consultation with Dumfries and Galloway Council, within whose area the proposed development would be situated, NatureScot (previously "SNH"), Scottish Environment Protection Agency and Historic Environment Scotland, all as statutory consultation bodies, and with other bodies which Scottish Ministers consider likely to have an interest in the proposed development by reason of their specific environmental responsibilities or local and regional competencies.

3.2 Scottish Ministers adopt this scoping opinion having taken into account the information provided by the applicant in its request dated 13th August 2023 in respect of the specific characteristics of the proposed development and responses received to the consultation undertaken. In providing this scoping opinion, the Scottish Ministers have had regard to current knowledge and methods of assessment; have taken into account the specific characteristics of the proposed development, the specific characteristics of that type of development and the environmental features likely to be affected.

3.3 A copy of this scoping opinion has been sent to Dumfries and Galloway Council for publication on their website. It has also been published on the Scottish Government energy consents website at www.energyconsents.scot.

3.4 Scottish Ministers expect the EIA report which will accompany the application for the proposed development to consider in full all consultation responses attached in **Annex A and Annex B**.

3.5 Scottish Ministers are satisfied with the scope of the EIA set out at Section 3 of the scoping report.

3.6 In addition to the consultation responses, Ministers wish to provide comments with regards to the scope of the EIA report. The Company should note and address each matter.

3.7 The proposed development set out in the Scoping Report refers to wind turbines, and other technologies including battery storage and solar panels. Any application submitted under the Electricity Act 1989 requires to clearly set out the generation station(s) that consent is being sought for. For each generating station details of the proposal require to include but not limited to:

- the scale of the development (dimensions of the wind turbines, solar panels, battery storage)
- components required for each generating station
- minimum and maximum export capacity of megawatts and megawatt hours of electricity for battery storage

3.8 Scottish Water provided information on whether there are any drinking water protected areas or Scottish Water assets on which the development could have any significant effect. Scottish Ministers request that the company contacts Scottish Water (via EIA@scottishwater.co.uk) and makes further enquires to confirm whether there any Scottish Water assets which may be affected by the development, and includes details in the EIA report of any relevant mitigation measures to be provided.

3.9 Scottish Ministers request that the Company investigates the presence of any private water supplies which may be impacted by the development. The EIA report should include details of any supplies identified by this investigation, and if any supplies are identified, the Company should provide an assessment of the potential impacts, risks, and any mitigation which would be provided.

3.10 Marine Directorate – Science Evidence Data and Digital (MD-SEDD) provide generic scoping guidelines for onshore wind farm and overhead line development https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren) which outline how fish populations can be impacted during the construction, operation and decommissioning of a wind farm or overhead line development and informs developers as to what should be considered, in relation to freshwater and diadromous fish and fisheries, during the EIA process.

3.11 In addition to identifying the main watercourses and waterbodies within and downstream of the proposed development area, developers should identify and consider, at this early stage, any areas of Special Areas of Conservation where fish are a qualifying feature and proposed felling operations particularly in acid sensitive areas.

3.12 **MD-SEDD also provide standing advice for onshore wind farm or overhead line development (which has been appended at Annex B) which outlines what information, relating to freshwater and diadromous fish and fisheries, is expected in the EIA report. Use of the checklist, provided in Annex 1 of the standing advice, should ensure that the EIA report contains the required information; the absence of such information may necessitate requesting additional information which may delay the process. Developers are required to submit the completed checklist in advance of their application submission.**

3.13 Scottish Ministers consider that where there is a demonstrable requirement for peat landslide hazard and risk assessment (PLHRA), the assessment should be undertaken as part of the EIA process to provide Ministers with a clear understanding of whether the risks are acceptable and capable of being controlled by mitigation measures. The Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Second Edition), published at http://www.gov.scot/Publications/2017/04/8868, should be followed in the preparation of the EIA report, which should contain such an assessment and details of mitigation measures. Where a PLHRA is not required clear justification for not carrying out such a risk assessment is required.

3.14 The scoping report identified viewpoints at Table 4 to be assessed within the landscape and visual impact assessment. Additional viewpoints have been requested from NatureScot and HES.

3.15 The noise assessment should be carried out in line with relevant legislation and standards as detailed in section 5.8 of the scoping report. The noise assessment report should be formatted as per Table 6.1 of the IOA "A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise.

3.16 As the maximum blade tip height of turbines exceeds 150 m the LVIA as detailed in section 5.2 of the scoping report must include a robust Night Time Assessment with agreed viewpoints to consider the effects of aviation lighting and how the chosen lighting mitigates the effects.

3.17 It is recommended by the Scottish Ministers that decisions on bird surveys – species, methodology, vantage points, viewsheds & duration - site specific & cumulative – should be made following discussion between the Company and NatureScot.

3.18 Where borrow pits are proposed as a source of on-site aggregate they should be considered as part of the EIA process and included in the EIA report detailing information regarding their location, size and nature. Ultimately, it would be necessary to provide details of the proposed depth of the excavation compared to the actual topography and water table, proposed drainage and settlement traps, turf and overburden removal and storage for reinstatement, and details of the proposed restoration profile. The impact of such facilities (including dust, blasting and impact on water) should be appraised as part of the overall impact of the working. Information should cover the requirements set out in 'PAN 50: Controlling the Environmental Effects of Surface Mineral Workings'.

3.19 The Scottish Ministers note that the proposed development is approximately 4km from the Fleet Valley National Scenic Area (NSA) at the nearest point and may therefore significantly affect some of the Special Landscape Qualities (SLQ's) of the NSA and the overall integrity of the NSA could be compromised. The SLQ's which could be adversely affected are a compact, working landscape of great charm; the gradation from coastal islands to upland hills; abundance of trees and woodlands; and views out of the Fleet Valley to the Merrick. NatureScot have highlighted the need to complete an Assessment of Effects on Special Landscape Qualities (AESLQ), in order to interrogate these effects. They have also provided advice on what should be considered within the EIA Report.

3.20 Ministers are aware that further engagement is required between parties regarding the refinement of the design of the proposed development regarding, among other things, surveys, management plans, peat, radio links, finalisation of viewpoints, cultural heritage, cumulative assessments and request that they are kept informed of relevant discussions.

## 4. Mitigation Measures

4.1 The Scottish Ministers are required to make a reasoned conclusion on the significant effects of the proposed development on the environment as identified in the environmental impact assessment. The mitigation measures suggested for any significant environmental impacts identified should be presented as a conclusion to each chapter. Applicants are also asked to provide a consolidated schedule of all mitigation measures proposed in the environmental assessment, provided in tabular form, where that mitigation is relied upon in relation to reported conclusions of likelihood or significance of impacts.

## 5. Conclusion

5.1 This scoping opinion is based on information contained in the applicant's written request for a scoping opinion and information available at the date of this scoping opinion. The adoption of this scoping opinion by the Scottish Ministers does not preclude the Scottish Ministers from requiring of the applicant information in connection with an EIA report submitted in connection with any application for section 36 consent for the proposed development.

5.2 This scoping opinion will not prevent the Scottish Ministers from seeking additional information at application stage, for example to include cumulative impacts of additional developments which enter the planning process after the date of this opinion.

5.3 Without prejudice to that generality, it is recommended that advice regarding the requirement for an additional scoping opinion be sought from Scottish Ministers in the event that no application has been submitted within 12 months of the date of this opinion.

5.4 It is acknowledged that the environmental impact assessment process is iterative and should inform the final layout and design of proposed developments. Scottish Ministers note that further engagement between relevant parties in relation to the refinement of the design of this proposed development will be required, and would request that they are kept informed of on-going discussions in relation to this.

5.5 Applicants are encouraged to engage with officials at the Scottish Government's Energy Consents Unit at the pre-application stage and before proposals reach design freeze.

5.6 When finalising the EIA report, applicants are asked to provide a summary in tabular form of where within the EIA report each of the specific matters raised in this scoping opinion has been addressed.

5.7 It should be noted that to facilitate uploading to the Energy Consents portal, the EIA report and its associated documentation should be divided into appropriately named separate files of sizes no more than 10 megabytes (MB).

**Kirstin Keyes**

**Energy Consents Unit**
**18/01/2024**

ANNEX A

# Consultation

**List of consultees who provided a response.**

- Dumfries and Galloway Council* 11 - 14
- Historic Environment Scotland (HES) 15 - 21
- NatureScot (previously “SNH) 22 - 42
- Scottish Environmental Protection Agency (SEPA) 43 - 47
- Arqiva 48 - 49
- Atkins Global 50 - 54
- British Telecommunications plc 55
- Defence Infrastructure Organisation 56 - 58
- Edinburgh Airport 59 - 60
- Glasgow Airport 61 - 63
- Glasgow Prestwick Airport 64 - 66
- Highlands and Islands Airports Limited 67
- Joint Radio Company Limited (JRC) 68 - 69
- Met Office 70
- MLL Telecom 71 - 73
- NATS Safeguarding 74 – 84
- Office of Nuclear Regulation (ONR) 85
- RSPB Scotland 86 - 88
- Scottish Water 89 - 91
- The Coal Authority 92 – 93
- Transport Scotland 94 - 98
- Virgin/O2 99 - 102
- Vodafone 103
- Woodland Trust 104 - 105
- Balmaghie Community Council 106 - 111
- Crossmichael and District Community Council 112 - 131
- Help Save Mochrum Fell Group 132 - 133
- Tongland and Ringford Community Council 134 - 136
- Twynholm Community Council 137 - 139

Internal advice from areas of the Scottish Government was provided by officials from Transport Scotland and Marine Directorate (in the form of standing advice from Marine Directorate – Science Evidence Data and Digital (MD-SEDD).

See Section 2.4 above for a list of organisations that were consulted but did not provide a response.

*Dumfries and Galloway Council provided a partial response. Any additional information received will be added as an addendum to the Scoping Opinion.

**Proposal: CONSULTATION REQUEST FROM SCOTTISH MINISTERS IN CONNECTION WITH REQUEST FOR SCOPING OPINION UNDER ENVIRONMENTAL IMPACT ASSESSMENT (SCOTLAND) REGULATIONS 2017 FOR PROPOSED WIND FARM COMPRISING OF 9 WIND TURBINES (WITH MAXIMUM TIP HEIGHT OF 180 METRES), BORROW PITS, SUBSTATION AND BATTERY STORAGE FACILITY, GROUND MOUNTED SOLAR PANELS, TEMPORARY CONSTRUCTION COMPOUND, FORMATION OF ACCESS TRACKS AND ASSOCIATED WORKS**

**Location: Lairdmannoch Energy Park, 7 Km North East Of Gatehouse Of Fleet And 10 Km West Of Castle Douglas**

**Application type: Scoping Opinion**

**Ref. 23/1803/ENQ**

1. This Scoping request from the Scottish Government Energy Consents Unit relates to a proposal to construct and operate an energy park comprising both wind and solar elements at the above location. The applicant at this point is Atmos Consulting, representing Lairdmannoch Energy Park Ltd.

The estimated capacity of the Proposed Development is anticipated to be 100MW (comprising 60MW wind, 20MW solar and 20MW battery storage). The application site lies within the Dumfries and Galloway Council area, and as the expected output of the wind farm will be in access of 50 MW, the proposed works will be determined by Scottish Ministers.

2. The Planning Service consulted the following departments of Dumfries and Galloway Council: (i) Council Roads Planning Team Leader, (ii) Environmental Health, (iii) Archaeology Officer, (iv) Wind Farms Landscape Architect, (v) Countryside Access Officer. To date, responses have been received from the following:

**3. Roads Planning Team Leader:**

Road: A713 Castle Douglas – Ayr; B795 Gerranton – Laurieston; C13s Lochenbreck

Comments: This request for scoping opinion proposes the erection of 9no. wind turbines of maximum height to blade tip of up to 180m along with associated infrastructure at proposed Lairdmannoch Energy Park, 7km north east of Gatehouse of Fleet and 10km west of Castle Douglas.

It is noted that the 'Scoping Report' submitted with this application identifies that:- • The proposal is for 9no. wind turbines, with a height of up to 180m (blade tip). • A battery storage facility is included as part of the proposed development. • The expected operational life of the development is 40 years. • Access to the site is via two proposed options: A. A75(T), A713, B795, west along C13s to site access, north of the development (currently preferred option) B. A75(T), A713, B795, south along A762 to site access, east of the development • No details have yet been provided in respect of the trip generation by construction traffic or predicted number of AILs. • The expected duration of the project construction phase is expected to take approximately 12- 12 months • The EIA will be supported by a CTMP.

Whilst I have no objections in principle to the proposal and have no issues with the proposed assessment scope or methodology outlined in the Scoping Report, I would offer the following observations that should be considered and addressed by any future submission/ES:-

• It would be appropriate that Transport Scotland be consulted with regard to any access utilising the Trunk Road network.
• It would be appropriate that any future application confirm the access route(s) and identify the full extent of proposed off-site road accommodation and mitigation works including passing place provision, carriageway strengthening, widening and alterations to road boundaries all along any proposed access route(s) necessary to permit construction traffic and the passage of component delivery vehicles (this may require land outwith the public road boundary and a separate planning consent may be required in respect of these works) and the potential impacts on utility services lying within the public road boundary.
• It should be noted that the A714 through Newton Stewart would not be suitable as a route for HGVs and AIL's and as such alternatives should be sought.
• Proposals for access routes, site access and all accommodation works must be supported by swept path tracks. All accommodation works must be designed and constructed to the satisfaction of the Planning Authority in consultation with the Roads Authority and will require appropriate permits and consents to have been issued.
• As the access route(s) has not been identified within the scoping report, I am unable to offer route specific advice; however, it should be noted that both route options to the proposed access(es) will cross a number of bridges/structures, many of which may be unsuitable for heavy HGVs and larger AILs, and that have limitations on safe axle loadings and/or restricted parapet widths. Where a proposed access route crosses bridges and culverts, the applicant will require to get approvals and safe axle loadings (in respect of those structures) from the Council's Engineering Services (Bridges and Structures) unit.
• All accommodation works must be designed and constructed to the satisfaction of the Planning Authority in consultation with the Roads Authority and will require appropriate permits and consents to have been issued.
• Where public road boundaries are to be altered either for the formation of temporary accesses or for accommodation works, these should be reinstated in their original position at the conclusion of construction works (unless prior agreements have been secured with the Planning and Road Authorities)
• It would be appropriate that any future submission/Environmental Statement include reference to a construction phase Traffic Management Plan (to be agreed in writing with the Police and the Roads Authority prior to any works commencing on site)
• The CTMP should include a programme of delivery types/numbers by month, details of all proposed mitigation measures to minimise the impact on local communities and businesses, agreed and excluded access routes and details of measures that will be implemented to ensure that (a) no stacking of delivery vehicles occur on any part of the public road network (b) the safety of the public using 'core' paths is maintained; and is to be agreed in writing with the Police, Transport Scotland and Dumfries and Galloway Council Roads Authorities prior to any works commencing on site. Access and excluded routes should be identified and agreed for all types of vehicles and a system of visible vehicle tagging/badging employed to ensure compliance with agreed routes and driver behaviour standards which should be supported by a Driver Code of Conduct.
• Whilst it is accepted that the intention is that normal and abnormal loads will take access and egress via an 'agreed' route, there is likely to be some increase in traffic using other minor roads. There is also the possibility of other unrelated windfarm projects being constructed in the vicinity concurrently with this project. Therefore, it would be appropriate

that the TMP acknowledge that co-ordination phasing may be required to mitigate against the cumulative traffic impact.
• In the event that suitable and sufficient aggregate is not available from on-site Borrow Pits, any future submission/ES/TMP should also identify worst case scenario that 100% of the aggregate required for construction shall be imported to site and identify the potential number of movements in that event .so that the potential impact of importing aggregate from elsewhere via the public road network be assessed
• Creation of windfarm access tracks and turbine placements may generate accelerated timber extraction. The A713, B795, C13s and A762 are all a well trafficked timber haulage route and therefore it would be appropriate that there should be consultation with nearby forest managers and timber hauliers through the office of the South of Scotland Timber Transport Officer to co-ordinate timber haulage operations that may use the access route during the construction period, to minimise the cumulative impact on communities and road users.
• It would be appropriate that there should be consultation with nearby forest managers and timber hauliers through the office of the South of Scotland Timber Transport Officer to co-ordinate timber haulage operations that may use the access route(s) during the construction period to minimise the cumulative impact on communities and road users.
• There is the possibility of other unrelated windfarm projects being constructed in the near vicinity concurrently with this project. Therefore, it would be appropriate that the CTMP acknowledge that co-ordination phasing may be required to mitigate against the cumulative traffic impact.
• The developer will be held responsible for the immediate execution of any repairs and will be required to meet the cost of above average maintenance to the public road network arising from the concentration of heavy traffic associated with this development. This to be secured by legal agreement (Section 96)
• The installation of the grid connection will have an impact upon public roads where the route follows a road, crosses a road or crosses a bridge on the road.

I trust the above information, which is given without prejudice to any future decision of the Council, is of assistance.

**4 Council Environmental Health Officer:**

We have no objections in principle. However, until a site specific noise impact assessment has been carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU Report ETSU-R-97, 1996 we would be unable to comment fully as to the expected impacts.

The site specific assessment should be carried out following the principles detailed in the Assessment & Rating of Noise from Wind Farms ETSU Report ETSU-R-97, 1996

We suggest that the proposal should be designed to meet the lower noise limits as specified in the ETSU-R-97 document, but where lower limits cannot be achieved the detailed reasons as to why this cannot be accomplished should be detailed in the ETSU-R-97 report within the Environmental Impact Assessment

We additionally suggest that a method statement for the construction project should be provided within the EIA for approval by Dumfries & Galloway Council. This should include an assessment of potentially noisy operations and outline the noise mitigation measures

proposed. This will also include a programme and phases for each stage of work. Guidance as to construction noise prediction methodology may be found within BS5228:2009.

5. To date, this is the extent of consultation responses received. Other responses from the outstanding consultees will be provided to ECU when they are received.

6. A 1:50000 hard copy of a ZTV reflecting hubs and tips of the proposed turbines has been received by the case officer at Dumfries and Galloway Council. This has been scrutinised and, as a result, the following list of additional, or alternative Representative Viewpoints (landscape and visual only – not residential or heritage) is recommended for consideration:

- Airie Hill @ 262279 568632 – within RSA & recreational path/route
- Meikle Bennan summit @ 254754 561261 – represents NSA
- West of Loch Whinyeon @ 261880 560883 – on core path from NSA heading eastwards
- A75 west of Twynholm @ 265102 554162 – visibility from A75 relating to Twynholm
- A75 SW of Castle Douglas @ 270145 558373 – visibility for A75 travellers heading west

7. The EIA should consider and assess impacts on the local public/core path resource, which includes a number of paths that are adjacent to the proposed development. It should identify mitigation in relation to impacts on this resource.

8. The EIA should provide detail of proposed biodiversity enhancement and improvement of the landscape as mitigation. This could include inclusion of planting/forestry plans.

9. It is acknowledged that it would be beneficial if the outstanding advice from other internal consultees could be provided; however, we note that the previous pre-application ref. 20/1837/HLE provided detailed coverage in relation to landscape, heritage and access. We also note the comprehensive Scoping Report which sets out relevant matters in adequate detail.

**By email to: econsents_admin@gov.scot**

Steven McClernon
Senior Case Officer
Onshore Electricity, Strategy and Consents
Directorate for Energy and Climate Change
Scottish Government

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Enquiry Line: 0131-668-8716
HMConsultations@hes.scot

Our case ID: 300047238
Your ref: ECU00004900
03 October 2023

Dear Steven McClernon

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Request for Scoping Opinion for Proposed Section 36 Application for Lairdmannoch Energy Park

Thank you for your consultation which we received on 23 August 2023 about the above scoping report. We have reviewed the details in terms of our historic environment interests. This covers World Heritage Sites, scheduled monuments and their settings, category A-listed buildings and their settings, inventory garden and designed landscapes, inventory battlefields and historic marine protected areas.

You should also seek advice from Dumfries and Galloway council's archaeology and conservation service for matters including non-designated archaeology and category B and C-listed buildings.

**Proposed Development**

We understand that the proposed development is located circa 7km north-east of Gatehouse of Fleet and 10km west of Castle Douglas in Dumfries and Galloway. The proposals comprise the construction of 9 turbines with a blade of up to 180m, hard standings, ground mounted photovoltaic solar panels with a maximum height of 3.2m, battery storage, a substation, access tracks and onsite borrow pits.

**Scope of Assessment**

We welcome that the potential cultural heritage effects are scoped into the assessment. We consider that the proposals have the potential to affect a number of heritage assets and therefore recommend that any EIA undertaken in support of the proposals should include a full assessment of impacts on the historic environment. This should take into account the guidance provided in the EIA handbook & the Managing Change in the Historic Environment: Setting guidance.

Potential direct impacts
We can confirm that there are no World Heritage Sites, scheduled monuments, category A listed buildings, inventory battlefields, or inventory gardens or designed landscapes within the proposed development boundary.

Potential setting impacts
Careful consideration should be given to reducing and avoiding impacts on the setting of heritage assets during the design process. There are a number of historic environment assets within our remit whose settings have the potential to be adversely impacted by the current proposals. This list should not be treated as exhaustive, and it is only intended as a reference to those assets which at this stage appear most likely to experience significant impacts.

- Loch Mannoch, cairn & stone circle N end of (Scheduled Monument SM1033)
- Edgarton Mote, fort 690m SW of Camelon Bridge (Scheduled Monument SM1119)
- Bargatton Farm, cairn 610m S of (Scheduled Monument SM1002)
- Cairntosh Hill, cairn (Scheduled Monument SM2237)
- Trostrie Mote, motte (Scheduled Monument SM1133)
- Pulcree Mote, motte (Scheduled Monument SM1130)
- Rusco Tower (Category A Listed Building LB3299)
- Anwoth Old Church Churchyard (Category A Listed Building LB3309)
- Cally (Garden & Designed Landscape GDL00079)

We are broadly content with the proposed 10km study area for the wind development and 2km for the solar development to identify assets with the potential for effects to their setting. We would recommend that assets beyond these distances be considered in the initial assessment and any assets with long distance views which form part of their cultural significance, and which could be affected, also be included. Of particular concern are the potential impacts on the integrity of the setting of Loch Mannoch, cairn and stone circle. Further information on this asset has been provided in the annex to this letter.

We note that a number of assets are located within or near forestry. In line with our Managing Change in the Historic Environment: Setting, guidance, any assessment should not rely on forestry and vegetation to screen potential impacts of development on the setting of assets.
We also have concerns with separation of the impacts of two individual elements of infrastructure (wind and solar) that comprise the same development. A holistic assessment of setting impacts should be undertaken to ensure that the full impacts of the proposals are considered and understood. This should take into account the guidance provided in the EIA handbook.

Potential cumulative impacts

We would recommend that the potential cumulative impacts of the development as a whole are looked at in combination with other developments in the vicinity. The cumulative assessment should assess the incremental impact or change when the proposed development is combined with other present and reasonably foreseeable developments.

Assets Scoped Out

We note that *"Impacts on the settings of heritage assets beyond 10km of the Wind Development"* are to be scoped out. We disagree with this as whilst individual assets may not have views of the development, both local and long-distance views towards and away from the assets may play a role in our understanding and appreciation of their setting. It should also be noted that reciprocal views between assets may play a role and the encroachment of the development or infrastructure in these views may impact on the assets' settings.

We note that *"designated heritage assets outwith the ZTV"* are to be scoped out for the Solar Development. We disagree with this, as a screened ZTV has been used, which incorporates the assumed screening effect provided by current vegetation cover and buildings. We do not consider this offers a reliable baseline assessment of potential setting impacts on cultural heritage assets. Trees, hedges and other forms of vegetation are vulnerable to changes in land use and farming practice, storms, disease and, as in the case of commercial forestry, can be a crop that will be removed on a specific time cycle. They cannot be considered to offer permanent, reliable screening against setting impacts.

We disagree with scoping out setting impacts from the construction of access tracks. Although access tracks are more likely to have physical impacts, there is potential for setting impacts as a result of their construction which should be considered in the detailed assessment.

Where certain assets have been scoped out, we would suggest that the grounds for doing so are clearly laid out and clearly presented in the EIA report. We cannot comment further on assets proposed to be scoped out until this information is provided and we recommend a robust assessment of potential impacts upon setting is carried out in line with our Managing Change in the Historic Environment: Setting.

Visualisations

Visualisations should be provided for any asset where a significant effect is identified. At this stage we therefore suggest that visualisations are likely to be required for those monuments where the potential for significant effects is identified. Where initial assessment identifies potential significant impacts on an asset, we recommend that

wireframe visualisations should be produced to help analyse the impacts. If impacts are identified as significant, photomontages should be prepared to illustrate these impacts.

If wireframes can be provided at an early stage this may assist with both the potential to identify significant effects and potentially scope out any monuments if significant effects are not likely, as well as identifying if potential mitigation by design is possible. It will also assist with identifying whether wireframes will be sufficient for the detailed assessment of impacts or whether photomontages will be required. We would be happy to discuss this in more detail with the applications as the EIA proceeds.

In particular, we recommend that visualisations are provided for views broadly north to Loch Mannoch, cairn and stone circle (SM1033) from the land around Loch Mannoch which the cairn and stone circle would have overlooked. These visualisations should include views towards the monument from land around Loch Mannoch and views out from the monument. The dam on the east shore of the loch may be an appropriate location for views towards the monument.

We also note the scoping report states no visualisation is proposed from Edgarton Mote, fort 690m SW of Camelon Bridge (SM1119) as it would be caught in the same field of view as Bargatton Farm, cairn 610m S of (SM1002) and Craig Hill, fort, Laurieston (SM2891) and these visualisations would be illustrative of views from the mote. We do not agree with this approach as Edgarton Mote is circa 1km from the proposed development and is likely to be more sensitive to setting impacts than Bargatton Farm, Cairn and Craif Hill fort which are located 1.87km and 4.37km respectively from the proposed development. We therefore recommend a separate visualisation is provided for Edgarton Mote, fort 690m SW of Camelon Bridge (SM1119).

Mitigation

The EIA process should include consideration of mitigation by design to avoid, reduce of offset setting impacts on cultural heritage assets. This process should be documented within the EIA report.

**Our Advice**

There are a number of nationally important historic environment assets within our remit in the vicinity of the development whose settings have the potential to be adversely impacted by the proposals as they stand. In particular, at this stage we have concerns about Loch Mannoch, cairn and stone circle (SM1033). These are further discussed in the annex to this letter.

Should the proposed development progress, we recommend that if impacts on the setting of monuments from turbines in the proposed scheme prove capable of mitigation, this should be taken into account and inform the iterative design process. The applicant may

wish to explore design options which change the development layout, turbine heights and number of turbines in order to identify whether significant adverse impacts can be mitigated. We strongly recommend that further engagement with ourselves in undertaken as the development progresses

**Further Information**

Guidance about national policy can be found in our 'Managing Change in the Historic Environment' series available online at www.historicenvironment.scot/advice-and-support/planning-and-guidance/legislation-and-guidance/managing-change-in-the-historic-environment-guidance-notes/. Technical advice is available through our Technical Conservation website at www.engineshed.org.

Please contact us if you have any questions about this response. The officer managing this case is Kevin Mooney who can be contacted by phone on **0131 651 6787** or by email on **kevin.mooney@hes.scot**.

Yours faithfully

**Historic Environment Scotland**

# Annex

## Background

We have previously responded to a pre-application consultation in which the development comprised a 12-turbine design, with no battery storage or solar elements. We then identified that no assets for our interests were included within the application boundary, however there were a number of assets in the surrounding area which might be impacted by the development. We stated there was not enough information submitted to consider how adversely the proposals the proposals would impact on these heritage assets and reach a decision on adverse effects. We highlighted that from the information within the Zone of Theoretical Visibility (ZTV), we considered the potential for impacts on assets. Where impacts were predicted, we requested the production of visualisations including photomontages and wireframes. We highlighted that many of the monuments within 10km are of types of asset for which both local and long-distance views towards and away from the monument are important aspects of their setting. We highlighted that intervisibility between monuments could also be important in understanding and appreciating their function in the landscape.

We raised particular concerns about the potential impact of the development on the scheduled monument of **Loch Mannoch, cairn & stone circle (SM1033)**, which was located 500m to the east of the proposed development boundary. We highlighted that the proposed development would dominate the local and more distant landscape, and it would entirely overshadow the asset.

## Current Proposals

We confirm that no assets for our interests are included within the application boundary, however there are a number of assets in the surrounding area which might be impacted by the development.

- Loch Mannoch, cairn & stone circle N end of (Scheduled Monument SM1033)
- Edgarton Mote, fort 690m SW of Camelon Bridge (Scheduled Monument SM1119)
- Bargatton Farm, cairn 610m S of (Scheduled Monument SM1002)
- Cairntosh Hill, cairn (Scheduled Monument SM2237)
- Trostrie Mote, motte (Scheduled Monument SM1133)
- Pulcree Mote, motte (Scheduled Monument SM1130)
- Rusco Tower (Category A Listed Building LB3299)
- Anwoth Old Church Churchyard (Category A Listed Building LB3309)
- Cally (Garden & Designed Landscape GDL00079)

During pre-application consultation, we were consulted on a development of 12-turbines. In relation to Loch Mannoch, cairn and stone circle (SM1033), we noted *"The proposed development would dominate the local and more distant landscape, and it would entirely overshadow the monuments."* Although the turbines have reduced in number, they remain in close proximity to the asset.

In addition to the impacts identified in our pre-application consultation response, there is now solar development proposed alongside the turbines. Individually and cumulatively, the proposals have potential for significant adverse impacts on integrity of setting of at least one scheduled monument.

- Loch Mannoch, cairn and stone circle (Scheduled Monument SM1033).
  This is a large prehistoric burial cairn and associated stone circle at the northern end of Loch Mannoch, less than 100m from the proposed development boundary. The location of the cairn and stone circle would have overlooked agricultural land and settlement, and views from and towards them from both the local area and the features of the wider landscape will have been essential to their understanding and appreciation in the past, as they are in the present.

  As noted at the pre-application stage, the current design of the proposed development would dominate the local and more distant landscape, and it is likely that turbines would overshadow the monuments. Whilst the turbine numbers have been reduced and repositioned for the scoping report, the proximity and scale of the turbines and introduction of the solar array to the east means the proposed development would be likely to dominate the setting of the monument.

  Views out from the monuments towards the land around the shores of Loch Mannoch are not likely to be affected by the turbines but may be affected by the solar array. However, we have particular concerns about views towards the asset from the land around Loch Mannoch that the cairn and stone circle would have overlooked.

This letter provides details of a number of assets we consider have the potential to experience such impacts. This list should not be treated as exhaustive and is only intended as a reference to those assets which at this stage appear most likely to be significant impacts. Further information is required to allow us to understand whether the potential impacts would be capable of mitigation by design or whether the impacts would be of a level that would raise concerns such that we might object.

**Historic Environment Scotland**
03 October 2023

Steven McClernon
Energy Consents Unit
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

20 September 2023

Our ref: CEA172230

Your ref: ECU00004900

By email to: steven.mcclernon2@gov.scot

Dear Steven

**ELECTRICITY ACT 1989**

**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

Thank you for consulting NatureScot on the above scoping document. We responded to a pre-application consultation from Dumfries and Galloway Council for a wind farm at this site, in 2020. I have attached our response to that consultation in Annex 2 to this letter for your information.
Comments in relation to landscape, ornithology, ecology and peatland are provided below.

## Landscape and visual effects

### Fleet Valley National Scenic Area (NSA)

Having reviewed the scoping report, based on the current proposed layout and the distance from the NSA at 4.1km and 6.8km respectively for the wind and solar elements of this proposal, as well as a review of the ZTV and the proposed turbine heights, ***we consider the proposal could significantly and adversely affect some of the Special Landscape Qualities (SLQ's) of the Fleet Valley NSA where the overall integrity of the NSA could be compromised. We would therefore be likely to object to the proposal should it be submitted in its current form.***

We offer further advice in Annex 1 and include responses to the applicant's questions posed in their Scoping Report.

## Ornithology

We are broadly happy with the ornithological survey information presented in the scoping report. The report states that work has been undertaken according to NatureScot guidance, so it should be acceptable though, as no raw data is presented here, we cannot check this. This data should be presented in the Environmental Statement.

We note that section 5.5.2 makes reference to access restrictions during raptor surveys. This will need to be discussed fully in the EIA and justification of the adequacy of the survey coverage given. We acknowledge the late start to the first season of breeding bird surveys due to covid restrictions , however the second season coverage started earlier so we are reasonably comfortable that overall coverage will be adequate.

In section 5.5.3 we note that Dumfries and Galloway Raptor Study group are still to be contacted. We advise that as per our guidance, this should be done earlier when planning surveys. The data requested from external sources should also cover the solar aspect of the proposal.

We note that no flights have been recorded for Greenland white-fronted geese (GWFG) during vantage point surveys, but we are aware from communication with RSPB Scotland that GWFG from the Loch Ken and River Dee Marshes Special Protection Area have been recorded from tagging studies travelling directly over the proposed location. Data should be obtained from the RSPB to determine the level of activity here and an assessment made as to the requirement for any additional work to inform the assessment.

With respect to the specific questions in section 5.5.7 we advise that:

1. Black grouse and raptor surveys would have been advisable, although data from alternative sources may be available which may give adequate information.
2. We agree that a population viability model should be undertaken for red kite given the high level of activity recorded and potential effects that may result on the wider population.
3. We are happy with the species identified for collision risk monitoring (not withstanding any further data that may be obtained for Greenland white-fronted geese).
4. We did not find information identifying which developments have already been identified in terms of looking at the cumulative effects, but given the potential significant impacts on red kite, this coverage will likely need to be extensive and should follow our cumulative assessment Which is here in this link to Nature.scot website - cumulative assessment guidance

## Ecology and peatland

NatureScot is happy with the proposed scope for the assessment of Ecological receptors for the proposal. Similarly, the proposed peatland assessment seems appropriate. The interpolated peatland map presented in Figure 11 shows there is scope for micro-siting of infrastructure to further minimise potential impacts on peatland, which we would expect to see investigated fully in the EIA. We are pleased that restoration options for peatland will be considered both on and off site to ensure that overall positive gain is achieved in terms of carbon management.

## Planning

We are pleased to see that the scoping report makes reference to NPF4 and identifies the requirement within this policy to ensure that measures are taken to ensure biodiversity enhancement is achieved in development design. We expect this to be fully explored within the EIA and we would also encourage the applicant to develop habitat management plans that are more fully realised than is often the case at application submission stage. This will ensure that biodiversity improvement receives full consideration at approval stage and not left to post consent.

Yours sincerely

Dylan De Silva
Operations Officer
NatureScot - Southern Scotland Unit

**ANNEX 1 - LANDSCAPE AND VISUAL AMENITY**

We will focus our engagement on issues most likely to raise issues of national interest. This means we will prioritise our resources towards providing advice on the effects on the Fleet Valley NSA. Our initial view is that there is potential for significant and adverse effects on the Special Landscape Qualities (SLQ'S) of this nationally protected landscape.

The proposed Development would be located at around 4km east of the NSA boundary.

The landscape character of the Fleet Valley in the northern area is relatively small scale, with the appearance of an upland glen type landscape (Narrow Wooded Glen / Foothills LCT), a landscape character type and features that would be highly sensitive to the size of the turbines proposed. The NSA at this point is particularly narrow at around 4km in width so could become easily overwhelmed by turbines of the size proposed.

Aspects that we consider could be sensitive to a development of this scale at this location would be;

- The enclosing eastern ridge becoming dominated or a reduction in its perceived scale by the large size of the turbines (noting that the turbines are proposed at 180m to tip, located upon landform that is 180 – 220m aod).
- Policy woodland / hedgerows, mature broadleaved woodlands, can act as scale indicators potentially accentuating the perception of the large size of the wind turbines. In this NSA they also provide a strong underlying landcover pattern providing smaller scale and more enclosed and intimate feeling in places, as well as making the landscape in the upper valley seem remote. Landscape scale and openness are particularly important characteristics in relation to wind turbines because large wind turbines can easily seem to dominate some landscapes.
- Detraction or a shift in focus from Gatehouse being the focal point in the valley as appreciated in views from the west.
- Adverse or poor scale relationship with respect to the location of the proposed Development close to the softer, enclosed and intimate upland part of the valley.
- The small size and extent of the NSA. Especially east to west, close to the development where it is only c.4km in width, the upland glen character could easily appear overwhelmed by turbines of the size proposed.

We highlight the importance of completing an Assessment of Effects on Special Landscape Qualities (AESLQ), in order to interrogate these effects. As per the draft guidance we consider that the special qualities most likely to be affected by the proposed Development will be,

1. ***A compact, working landscape of great charm***

This area contains great variety *within a small area*. Its various elements, both natural and cultural, *blend well together*, resulting in a working landscape of great charm. *The upper Fleet Valley has the appearance of an upland glen with a flowing river at its centre*.

2. ***The gradation from coastal islands to upland hills***

Gentle transformation through ordered farms and fields, *to a landscape with a wilder feel of hills and moors. This juxtaposition enables contrasting aspects of the Scottish countryside to be experienced within a short journey or a single view*.

*The valley becomes more enclosed and the sides steeper, until a narrow upland valley is reached*, with slopes of moorland; the high peak of Cairnsmore of Fleet (outside the NSA) is visible from the upper slopes. *There are few buildings here and the whole area feels remote*.

***3. Abundance of trees and woodlands***

The abundance of trees and woods, whether acting as field boundaries, old coppice, wood pasture, policy woodlands or modern plantation, adds great variety and texture.

However trees do not appear overly dominant but, by breaking up the open fields and hills, *give an enclosed and intimate feel to many areas.*

**4. Views out of the Fleet Valley to … the Merrick**

We would expect these aspects to be fully assessed in more detail within the AESLQ.

We are content that the Solar Array be scoped out of the AESLQ subject to receipt of a ZTV with no screening and covering the Fleet Valley NSA showing no visibility.

<u>Presentation of information</u>

As a general point, it would greatly assist us if the NSA boundary was provided on all relevant plans, ZTV's, LCT etc. with adequate scaled OS mapping, given the relatively compact nature of this NSA. We suggest at a minimum a bare ground hub <u>and</u> tip ZTV be supplied as per our guidance. In <u>addition</u> to bare ground, given the wooded nature of the area, a ZTV including screening would also be acceptable. The ZTV for the wind energy development is difficult to interrogate as while the hub height information is good it doesn't provide the number of tips visible.

**Questions to Consultees**

Is the scope of the assessment for both the Wind Development and the Solar Development, acceptable?

*There were no details as to which SLQ's are proposed to be assessed. We consider that there is potential for the SLQ's mentioned above to be affected and therefore consider the focus of the assessment should be on these ones.*

Are the study areas appropriate?

*No comment as our focus is on the Fleet Valley NSA which appears to be included within the study area.*

Are the landscape and visual receptors included appropriate?

*Broadly though as point 1 above there is no detail as to which SQ's are proposed to be assessed.*

Is the selection of viewpoints acceptable?

No, there are currently only two representative viewpoints located within the NSA, we consider the following should be considered for inclusion to cover the SQ's and how the wind farm would be perceived from within the National Scenic Area.

Mill Knock - **NX553549**

Rutherfords Monument - **NX587558**

Old Military Rd. - **NX592569**

Doon of Culreoch - **NX586631**

B796 Opposite Castramon Wood /NCR 7 - **NX584600**

*We would be happy to discuss the night time viewpoints once the design is finalised.*

ANNEX 2 – NatureScot pre-application response to Dumfries and Galloway Council

Mr Andrew Robinson
Dumfries and Galloway Council
Economy and Resources
Development Management
Kirkbank
English Street
Dumfries
DG12HS

19 November 2020

Our ref: CPA161029

Your ref: 20/1837/HLE

Via e-mail to
planning@dumgal.gov.uk

Dear Andrew

**PROPOSED WIND FARM DEVELOPMENT – LAIRDMANNOCH – PRE APPLICATION ENQUIRY**

Thank you for your letter dated 30 October requesting comment from NatureScot on the above pre-application enquiry. We are pleased to be involved at an early stage of a development where there is potential to effect natural heritage interests of national importance.

**Summary**

This letter is for advice only. Due to the potential for significant effects on the Fleet Valley National Scenic Area (NSA) and ornithological receptors, we feel it is necessary to point out that we may object to this development should it proceed to a full planning application. Obviously this view is based on the limited information presented and our informed advice will be contingent on a full assessment of impacts and mitigation as determined through the Environmental Impact Assessment process.

**Appraisal**

We refer you to our general pre-application and scoping advice for onshore wind farms, which contains advice for developers on the general considerations to inform the approach to environmental impacts for all onshore wind farms. The comments below relate to specific issues that at this early stage we feel are worth highlighting.

Landscape and visual effects

The proposal would be located approximately 4km from the boundary of the Fleet Valley NSA, with visibility extending out to around 15km within the designated area. We note that the ZTV supplied to us is one that accounted for screening. As per our guidance we expect a bare ground ZTV be produced as it can account for the seasonal and variable nature of tree cover and show the visibility as a worst case scenario. A ZTV with screening can still be supplied but in addition to the bare ground one.

Given the height of the turbines we expect that turbine lighting would also be required. Therefore a hub height ZTV would assist us in identifying those areas where the lighting would be visible from.

We consider the Fleet Valley NSA could be sensitive to a development with turbines of this height, as this could conflict with the smaller more intimate scale and could detract from key focal points and features within the Fleet valley, particularly if it was visible along the enclosing easterly edge.

We recommend that the special qualities of the NSA are reviewed and an assessment made of the proposal against them to see if these adverse effects could be reduced, removed or otherwise mitigated. We have produced draft guidance on assessing the impacts of development on special landscape qualities which is presented in Annex 1 of this letter as it is not yet available on the NatureScot website.

At this early stage and with outline information it is difficult for us to come to a fully informed view, however noting the likely pattern of visibility across the NSA we consider that the proposal may cause significant adverse effects on the special qualities of the Fleet Valley NSA, such that the objectives of the designation and overall integrity of the area could be compromised. **We might therefore object to this proposal.**

Ornithology

A proposal of this nature at this location is potentially sensitive given that the site boundary is less than 4km from the red kite feeding station at Lauriston and as a result the general area of where much of the Dumfries and Galloway red kite population is. In addition to this, one of only two pairs of the western Southern Upland's golden eagle pairs are within foraging distance of the site. The proposed location is also very close to Laughenhie and Airie Hills Site of Special Scientific Interest, which is an important wintering site for hen harrier in the South of Scotland as well as being notified for its breeding bird assemblage. There is also scope for connection with Loch Ken and River Dee Marshes Special Protection Area and associated effects on Greenland white-fronted and greylag geese. Given that there are a number of ornithological sensitivities, we believe that there is scope for this development to raise concerns of national interest and **we might therefore object to this proposal**. Clearly careful consideration will need to be given to the assessment of ornithological impacts should this project proceed.

**Conclusion**

We refer you to our general pre-application and scoping advice to help inform considerations going forward. Whilst we would not attempt to predict the result of any assessment, we feel that it would be useful at this stage to highlight the possibility of a proposal of this nature at this location prompting an objection(s) from NatureScot.

This advice is provided by NatureScot, the operating name of Scottish Natural Heritage.

Yours sincerely

Dr Dylan De Silva
Operations Officer
NatureScot
Southern Scotland Unit

Annex - Draft Guidance for Assessing the Effects on Special Landscape Qualities

## Introduction

1. In Scotland we have two national landscape designations, our National Parks (2), and National Scenic Areas (40). These areas are both highly valued and sensitive and represent the country's finest landscapes. Whilst some change in these landscapes is inevitable, it is recognised this should be managed carefully to ensure their special landscape qualities (SLQs) are safeguarded so that they can be enjoyed by future generations. Incorporating development sympathetic to these exceptional landscapes, requires innovative thinking and real commitment to achieving high quality design from the outset. Assessing the impacts of proposals on the special qualities of our finest landscapes is key to meeting this challenge.

### Using this Guidance

2. This guidance describes the approach that should be used when assessing the effects of development and other land use change (such as forestry) upon the special landscape qualities of our National Parks (NPs) and National Scenic Areas (NSAs). The legislative importance of SLQs is reflected in the relevant policy context (SPP, LDPs, Park Plans – see Annexe 2). It is intended to help developers, land managers and others in addressing any effects arising from their proposals, and assist SNH, NPAs and LAs in considering any effects.

3. The principle audience for this guidance is the professional practitioner who has experience of using existing assessment methodologies such as GLVIA. The SLQ assessment should be undertaken by a suitably qualified and experienced landscape or planning professional(s). The assessor must provide an appropriate level of information to enable the decision maker, and consultees, to reach a view on the effects of the proposal on the NSA or NP.

-

4. The use of worked examples which consider different types of proposals and landscape context is encouraged. This should provide an understanding of how the 4 different stages of work should be approached and applied, with one stage informing the next, to provide a clear rationale for judgements made and resultant assessment of effect(s) predicted.

5. The SLQ assessment should be captured within the LVIA report (where this is required to accompany a planning or other application), or free-standing (where a planning or other application requires a SLQ assessment but not an LVIA). **The scope and level of SLQ assessment should be discussed at an early stage with the relevant Park Authority or Local Authority, and SNH where appropriate.**

6. A Special Landscape Qualities Impact Assessment should be carried out when proposals are likely to result in significant effects on single or multiple SLQs, regardless of whether the proposal is within or outside the boundary of the designated landscape area. An assessment of impacts on SLQs is highly likely to be required where a proposal falls wholly or partly within an NSA or NP, or where beyond the boundary of the designated area, significant effects on the SLQs are likely.

7. Many of Scotland's NSAs and NPs overlap with Wild Land Areas (WLAs). Impacts on WLAs are assessed through a separate process and only consider the wild land qualities as described within the published descriptions for individual WLAs. The SLQ Impact Assessment covers the landscape qualities as identified in the published report for each NSA or NP, including in some cases, qualities such as a sense of wildness/seclusion/remoteness. In any instances we would encourage either a WLA impact assessment or an NSA impact assessment, but there may be instances where both are required. Choice of which assessment methodology to use, to avoid duplication and unnecessary complication, should be discussed with the relevant Park Authority and /or SNH where appropriate.

8. This guidance advocates a narrative approach, rather than numerical scores or tables. The purpose of the narrative is to provide the transparency that is necessary when drawing conclusions and making judgements of effect on experiential and perceptual qualities.

9. This methodology recognises that the high sensitivity of the designated landscape resource is inherent, irrespective of numbers of receptors. This accords with the approach to assessment of sensitivity in GLVIA where nationally designated landscapes typically have high value and highly susceptible to changes in landscape.

10. The detail of the assessment required will differ according to circumstances; including amongst other things the nature, scale, level of detail and certainty of the proposal. Early discussion with the Park Authority, Local Authority and SNH as appropriate will help establish the potential effects on the SLQs of a particular designated landscape, and the best phase or phases in the design development of a proposal at which to include an assessment of SLQs. **In general it is worth being aware of the SLQs which may be affected by a proposal, or land use change, as early as possible.** This guidance can be applied at any stage in the design development of a proposal and where applicable within the EIA process.

**Understanding Special Landscape Qualities**

11. SLQs are perceptual qualities and are about the way people respond to place. The assessment approach advocated here requires an understanding of how an area is *perceived and used by people*. How a place is used should not be confused with how many people use this landscape.

12. In 2007/8 SNH used a standard methodology to determine the special landscape qualities (SLQs) of Scotland's National Scenic Areas (NSAs). In 2009 this work was extended, using the same methodology, to include the whole of the National Parks and not just the NSAs within them. The term 'special landscape qualities' is used to differentiate the 2009 work from earlier work carried out by the National Park Authorities which identified a wider range of special qualities, not limited to landscape. Reports detailing the SLQs for each of the National Scenic Areas and both the Cairngorms and the Loch Lomond and The Trossachs National Parks were published in 2010

13. The structure and detail contained in these reports differs slightly from one to another, reflecting the differing nature and sometimes extent of the designated areas. The assessment approach outlined here should be tailored to the individual characteristics of the NSA/NP and the specifics of the proposals.

**The Assessment Process**

14. The table extract below summarises the approach to take when considering impacts on SLQs. The assessment should
    - be proportionate to the scale and stage of the development
    - be clear and transparent so that the reasoning that informs judgements can be tracked; and
    - convey the complexity of effects

15. A more detailed proforma for presenting the assessment of effects on SLQs is set out in Annex 1. A tabular approach to the recording of the assessment provides transparency. In particular it enables clear judgements to be taken at each stage that support the final conclusions on the assessment of effects to SLQs and any actions required. It is intended to frame rather than limit the assessment.

| **Step 3 The Assessment** | | | |
|---|---|---|---|
| **Column 1**<br>**Relevant SLQs identified at scoping and refined during subsequent study** | **Column 2**<br>**Underpinning landscape characteristics to inform detailed SLQ descriptions** | **Column 3**<br>**Impacts of the proposal on underpinning key characteristics and the effects on SLQs** | **Column 4**<br>**Proposed mitigation and timescales.**<br>**Level of residual effect.** |
| **Group 1 (Where SLQs are grouped give an explanation of the grouping and how derived e.g. experiential, spatial)** | | | |
| | | | |
| | | | |

**Step 1 The Proposal – Gain as full an understanding of the proposal as possible**

16. Where applicable, reference should be made to the 'project description' within an EIA Report, LVIA or related documentation and summarised for the purposes of the SLQ assessment. –The main components of the proposal should be identified and described. This includes any removal of existing structures or landscape features (eg. landform, vegetation), the introduction of new structures (eg. buildings, masts, turbines), and associated

infrastructure including ground modelling, access roads, quarries or borrow pits, planting schemes, boundary treatments, lighting or signage. Of particular importance is the location and siting of the proposal, sizes and heights of structures, scale and extent, colours, and materials. In summarising the project description this should draw out any key aspects of the proposal that could impact on the SLQ, so informing the assessment in Column 3. We should be asking ourselves what impacts would these individual components and the development/proposal in entirety have on the scale, shape, diversity, variety of the SLQs identified? It is only by gaining a thorough understanding of the proposal that the full extent of effects on the SLQs can be understood.

**Step 2 Define the Study Area and Scope of the Assessment identifying the area likely to be affected**

17. This is a key stage of work, and covers two aspects, firstly to identify the extent of the study area which will relate to the location and form of the proposal, and secondly the relationship of this study area to the wider NSA/NP. It will be informed by:

- The extent of visibility of the proposal including any ZTVs for the proposal;
- an understanding of how the proposal will be experienced from parts of the NSA/NP, including routes, movement through and key locations in the designated area;
- site based work (in initial study area might be identified and subsequently refined following a site visit);
- landscape character;
- the potential for cumulative effects.

18. The study area may include a part of the designated area, the whole of the designated area, or in some cases the study area may extend beyond the boundary of the designated area. This latter situation will happen where SLQs likely to be affected by the proposal are derived in part or wholly, from landscape features and landscape characteristics out with the designated area, or alternatively where SLQs which are experienced from outside the designated area, may be affected. The study area for the SLQ assessment should be defined, tested in the field and agreed with the NPA, SNH or local authority.

19. This study area for the SLQ assessment may not be the same as the study area for an associated LVIA (where required). The study area for the SLQ assessment relates to how the SLQ are presented (how they 'work' - what they are, where they occur, how they relate to each other and how they are experinced)

**Step 3 The Analysis of Impacts and Effects on SLQs**

20. Each of the stages of assessment below relate to a column of the table, a proforma for which is included in Annex 1 of this guidance.

**Column 1 Identification of relevant SLQs within the study area**

21. With reference to the published SLQ report identify which SLQ(s) may be affected. The purpose here is to make the assessment focussed, appropriate and proportionate to the landscape context and the type of development or land use change proposed. The documented SLQs should be considered in light of the proposal and its location, and informed by local knowledge/field work/ZTV and other supporting information and in discussion with the NPA, LA or SNH as appropriate.

22. It may not be necessary to consider the effects of the proposal on every SLQ listed in the NSA/NP report. The aim should be to identify as far as is possible which SLQs are to be included in, or scoped out, of the impact assessment. SLQs can be considered individually or grouped. Where the SLQs interact with each other (contributing to the experience in the study area) they are best presented and considered together as a group. This can be revised following further site study and more in-depth consideration and site work. A simple justification of why SLQs are grouped is helpful. Understanding where people go and how people move through and experience the landscape is crucial.

23. In particular field work should identify whether a sequential travelling assessment (eg along a road, glen or coast), or criss-crossing a landscape and/or a series of defined viewpoints and viewsheds/visual envelopes would be preferable to inform which SLQs are experienced in different locations. These initial findings could be recorded on the pro-forma.

24. The relevant special landscape qualities would be those that one can experience within the study area (throughout the study area or in a part of the study area) and which may be affected by the proposal. Some of the SLQs we experience are dependent upon landscape characteristics and features beyond the boundary of the designated area. This is especially the case with visual and sensory qualities e.g. panoramic views, specific views, dark skies etc.

25. SLQs such as those that are about the experience of a 'named' view or a built structure or settlement may have a definite location (spatial SLQs), whereas other SLQs tend to be experienced together (nested SLQs such as mature impenetrable pine woods within an incised glen). Those SLQs that tend to be experienced together will usually be best grouped and assessed together (see examples in Annex 3).

**Column 2 The Key Landscape Characteristics that underpin the SLQs**

26. The narrative combining landscape character and qualities will be the basis for assessing impacts. To develop this narrative the assessor should refer to the published SLQ description and the landscape character assessment (LCA) but be led by the on-site experience and assessment. Inherent in this approach is the use of the key landscape characteristics identified, to interpret how the SLQs are experienced, and subsequently presented in the assessment. This is likely to require a greater level of detail, sufficient to inform the assessment of impact.

27. Site visits, and/or a good working knowledge of the area and how it is used, are key to providing a robust and consistent level of baseline SLQ/LCA information, which can usefully inform the assessment of effects and proposals for mitigation.

28. The text within the published SLQ reports varies in content and level of detail across the suite of NSAs/NPs. A pragmatic approach is advocated and early discussion with SNH/NPAs would help inform this process.

**Column 3 Impact of the proposal on underpinning characteristics and the effects on SLQs**

29. The narrative here should focus on assessing the effects of the proposal on the key landscape characteristics that underpin the SLQ and their experience. This should be a considered and integrated narrative assessment (see examples).

30. Use of ZTV, visualisations, wirelines and photomontages will inform the assessment, alongside site visits. This section should include a consideration of the impacts of the key components of the proposal using design principles (such as shape, scale, diversity, texture) to explain the impacts and how they may be further mitigated.

**Column 4 Consideration of proposed mitigation and timescales, level of impact**

31. The following questions should frame the consideration of mitigation.

- Is there potential for mitigation of residual effects to reduce effects on the SLQ(s) and their experience (e.g. through design modifications or management)?
- What are the realistic timescales for mitigation to become effective in reducing effects on SLQ(s) eg. growth of mature native woodland, restoration of land cover disturbance? The results of mitigation in reducing effects should be considered in the short, medium and long term. What is the certainty that mitigation will become effective?
- Is there potential for enhancement/compensation?
-

32. Judgements on the level of impacts o SLQs are based on an assessment approach which considers:

- a) The sensitivity of the resource (this is always considered high because of the national status of the designation)
- b) the nature of the effects and its longevity
- c) the potential to avoid or mitigate the effect (through location, siting, design), and
- d) limitations to carrying out mitigation (eg. conflicting objectives, technological challenges).

33. Having considered the aforementioned parameters affecting the level of impact, what are the residual effects on the SLQ or group of SLQs. Levels of effects should be expressed as high, medium or low, with medium and high effects considered to be significant under SPP or the relevant policy test.

-

-

**Step 4 Summary of Impacts on the SLQs, implications for the NSA/NP and possible future effects on SLQs and recommendations for mitigation**

-

**34.** This final stage draws together all the strands of the assessment to present in summary, evidence to inform the decisions on policy. This narrative should cover the following issues:

-

- the relationship between affected SLQs (where relevant) in the context of the study area and the wider designated landscape, including any specific locational issues in relation to the way the landscape is experienced eg. gateway experiences or specific features or views;
- the nature and levels of effects on the relevant SLQs.
- relationship of people with SLQs and how they may be experienced and affected (expectations of people, mode of transport);
- a consideration of possible cumulative effects and the incremental erosion of a designated landscape's SLQs over time.

35. From the judgement above, a statement of effect should be produced:

'Significant effects have been identified on the following SLQs…..[list]'

What does this mean for the study area? This means that in the study area the SLQs will/will no longer be represented or experienced?

What does this mean for the wider designated area?

**Assessment of Impacts on Special Landscape Qualities for :**

| **Step 1 The Proposal** |
|---|
| The proposal is … |

| **Step 2 The Study Area** | Outline Map |
|---|---|
| **The relationship of the proposal to the designated landscape (within or outside)**<br><br>…….. NSA/NP<br><br>Notes: Relationship of the proposal to any relevant WLA. Is a WLA impact assessment required?<br><br>**Description of the study area and how it has been defined.**<br>The study area includes …<br><br>The Relevant Published SLQ report is (insert hyperlink)<br>The Relevant landscape character assessment(s) is …….. | |

| **How the Area is used and experienced by people** |
|---|
| Where people go and why. |

| **Step 3 The Assessment** | | | |
|---|---|---|---|
| **Column 1**<br>**Relevant SLQs identified at scoping and refined during subsequent study** | **Column 2**<br>**Underpinning landscape characteristics to inform detailed SLQ descriptions** | **Column 3**<br>**Impacts of the proposal on underpinning key characteristics and the effects on SLQs** | **Column 4**<br>**Proposed mitigation of effects, timescales for mitigation to be effective. Level of residual effects on SLQs. Suggestions for further mitigation where relevant.** |
| **Groupings - Where SLQs are grouped give an explanation of the groupings and how derived e.g. experiential, spatial** | | | |
| Group 1 | | | |
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| Group 2 | | | |
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|---|---|---|---|
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| Group 3 | | | |
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| | | | |
| **Step 4 Summary of effects on SLQs, implications for the NSA/National Park and possible future effects on SLQs and recommendations for further mitigation** | | | |

An assessment again the relevant planning legislation and policy tests should be undertaken, in the relevant chapter of the EIA Report, where applicable.

## Joyce Melrose

**From:** Milne, Alasdair <alasdair.milne@SEPA.org.uk>
**Sent:** 18 September 2023 14:52
**To:** Econsents Admin; McClernon S (Steven)
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park SEPA ref 10265

OFFICIAL

Steven,

**ELECTRICITY ACT 1989**
**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**
**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK**

I refer to your consultation with SEPA of 23 August below. I apologise for being late in responding to you.

This email sets out our scoping information requirements. There may be opportunities to scope out some of the issues below depending on the site. Evidence must be provided in the submission to support why an issue is not relevant for this site in order **to avoid delay and potential objection.** We would welcome the opportunity to comment on the draft submission.

If there is a delay between scoping and the submission of the application then please refer to our website for our latest information requirements as they are regularly updated; current best practice must be followed.

**1. Site Layout**

1.1. All maps must be based on an adequate scale with which to assess the information. This could range from OS 1: 10,000 to a more detailed scale in more sensitive locations. Each of the maps below must detail all proposed upgraded, temporary and permanent site infrastructure. This includes all tracks, excavations, buildings, borrow pits, pipelines, cabling, site compounds, laydown areas, storage areas and any other built elements. Existing built infrastructure must be re-used or upgraded wherever possible. The layout should be designed to minimise the extent of new works on previously undisturbed ground. For example, a layout which makes use of lots of spurs or loops is unlikely to be acceptable. Cabling must be laid in ground already disturbed such as verges. A comparison of the environmental effects of alternative locations of infrastructure elements, such as tracks, may be required.

**2. Engineering activities which may have adverse effects on the water environment**

2.1. The site layout must be designed to avoid impacts upon the water environment. Where activities such as watercourse crossings, watercourse diversions or other engineering activities in or impacting on the water environment cannot be avoided then the submission must include justification of this and a map showing:

a) All proposed temporary or permanent infrastructure overlain with all lochs and watercourses.
b) A minimum buffer of 50m around each loch or watercourse. If this minimum buffer cannot be achieved each breach must be numbered on a plan with an associated photograph of the location, dimensions of the loch or watercourse and drawings of what is proposed in terms of engineering works.
c) Detailed layout of all proposed mitigation including all cut off drains, location, number and size of settlement ponds.

2.2. If water abstractions or dewatering are proposed, a table of volumes and timings of groundwater abstractions and related mitigation measures must be provided.

2.3. Further advice and our best practice guidance are available within the water engineering section of our website. Guidance on the design of water crossings can be found in our Construction of River Crossings Good Practice Guide.

2.4. Refer to our flood risk Standing Advice for advice on flood risk. Watercourse crossings must be designed to accommodate the 0.5% Annual Exceedance Probability (AEP) flows, or information provided to justify smaller structures. If it is thought that the development could result in an increased risk of flooding to a nearby receptor then a Flood Risk Assessment must be provided in support of the submission. Our Technical flood risk guidance for stakeholders outlines the information we require to be submitted as part of a FRA. Please also refer to Controlled Activities Regulations (CAR) Flood Risk Standing Advice for Engineering, Discharge and Impoundment Activities.

## 3. Disturbance and re-use of excavated peat and other carbon rich soils

3.1. The planning submission must a) demonstrate how the layout has been designed to minimise disturbance of peat and consequential release of CO2 and b) outline the preventative/mitigation measures to avoid significant drying or oxidation of peat through, for example, the construction of access tracks, drainage channels, cable trenches or the storage and re-use of excavated peat. There is often less environmental impact from localised temporary storage and reuse rather than movement to large central peat storage areas.

3.2. The submission must include:

a) A detailed map of peat depths (this must be to full depth and follow the survey requirement of the Scottish Government's Guidance on Developments on Peatland - Peatland Survey (2017)) with all the built elements (including peat storage areas) overlain to demonstrate how the development avoids areas of deep peat and other sensitive receptors such as Groundwater Dependent Terrestrial Ecosystems.

b) A table which details the quantities of acrotelmic, catotelmic and amorphous peat which will be excavated for each element and where it will be re-used during reinstatement. Details of the proposed widths and depths of peat to be re-used and how it will be kept wet permanently must be included.

3.3. To avoid delay and potential objection proposals must be in accordance with Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste and our Developments on Peat and Off-Site uses of Waste Peat.

3.4. Dependent upon the volumes of peat likely to be encountered and the scale of the development, applicants must consider whether a full Peat Management Plan (as detailed in the above guidance) is required or whether the above information would be best submitted as part of the schedule of mitigation.

3.5. We do not validate carbon balance assessments except in exceptional circumstances where requested by Scottish Government. Our advice on minimising peat disturbance and peatland restoration may need to be taken into account when you consider such assessments.

## 4. Disruption to Groundwater Dependent Terrestrial Ecosystems (GWDTE)

4.1. GWDTE are protected under the Water Framework Directive and therefore the layout and design of the development must avoid impact on such areas. The following information must be included in the submission:

a) A map demonstrating that all GWDTE are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the distances require it.

b) If the minimum buffers above cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all GWDTE affected.

4.2. Please refer to Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems for further advice and the minimum information we require to be submitted.

## 5. Existing groundwater abstractions

5.1. Excavations and other construction works can disrupt groundwater flow and impact on existing groundwater abstractions. The submission must include:

a) A map demonstrating that all existing groundwater abstractions are outwith a 100m radius of all excavations shallower than 1m and outwith 250m of all excavations deeper than 1m and proposed groundwater abstractions. If micro-siting is to be considered as a mitigation measure the distance of survey needs to be extended by the proposed maximum extent of micro-siting. The survey needs to extend beyond the site boundary where the distances require it.

b) If the minimum buffers above cannot be achieved, a detailed site specific qualitative and/or quantitative risk assessment will be required. We are likely to seek conditions securing appropriate mitigation for all existing groundwater abstractions affected.

5.2. Refer to Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions for further advice on the minimum information we require to be submitted.

## 6. Borrow pits

6.1. In accordance with Paragraphs 52 to 57 of Planning Advice Note 50 Controlling the Environmental Effects of Surface Mineral Workings (PAN 50) a Site Management Plan should be submitted in support of any application. The following information should also be submitted for each borrow pit:

a) A map showing the location, size, depths and dimensions.

b) A map showing any stocks of rock, overburden, soils and temporary and permanent infrastructure including tracks, buildings, oil storage, pipes and drainage, overlain with all lochs and watercourses to a distance of 250m. You need to demonstrate that a site specific proportionate buffer can be achieved. On this map, a site-specific buffer must be drawn around each water feature proportionate to the depth of excavations and at least 10m from access tracks. If this minimum buffer cannot be achieved each breach must be numbered on a plan with a photograph of the location, dimensions of the loch or watercourse, drawings of what is proposed in terms of engineering works.

c) You need to provide a justification for the proposed location of borrow pits and evidence of the suitability of the material to be excavated for the proposed use, including any risk of pollution caused by degradation of the rock.

d) A ground investigation report giving existing seasonally highest water table including sections showing the maximum area, depth and profile of working in relation to the water table.

e) A site map showing cut-off drains, silt management devices and settlement lagoons to manage surface water and dewatering discharge. Cut-off drains must be installed to maximise diversion of water from entering quarry works.

f) A site map showing proposed water abstractions with details of the volumes and timings of abstractions.

g) A site map showing the location of pollution prevention measures such as spill kits, oil interceptors, drainage associated with welfare facilities, recycling and bin storage and vehicle washing areas. The drawing notes should include a commitment to check these daily.

h) A site map showing where soils and overburden will be stored including details of the heights and dimensions of each store, how long the material will be stored for and how soils will be kept fit for restoration purposes. Where the development will result in the disturbance of peat or other carbon rich soils then the submission must also include a detailed map of peat depths (this must be to full depth and follow the survey requirement of the Scottish Government's Guidance on Developments on Peatland - Peatland Survey (2017)) with all the built elements and excavation areas overlain so it can clearly be seen how the development minimises disturbance of peat and the consequential release of $CO_2$.

i) Sections and plans detailing how restoration will be progressed including the phasing, profiles, depths and types of material to be used.

j) Details of how the rock will be processed to produce a grade of rock that will not cause siltation problems during its end use on tracks and other hardstandings.

**7. Pollution prevention and environmental management**

7.1. One of our key interests in relation to developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration.

7.2. A schedule of mitigation supported by the above site specific maps and plans must be submitted. These must include reference to best practice pollution prevention and construction techniques (for example, limiting the maximum area to be stripped of soils at any one time) and regulatory requirements. They should set out the daily responsibilities of ECOWs, how site inspections will be recorded and acted upon and proposals for a planning monitoring enforcement officer. Please refer to Guidance for Pollution Prevention (GPPs).

**8. Life extension, repowering and decommissioning**

8.1. Proposals for life extension, repowering and/or decommissioning must demonstrate accordance with SEPA Guidance on the life extension and decommissioning of onshore wind farms. Table 1 of the guidance provides a hierarchical framework of environmental impact based upon the principles of sustainable resource use, effective mitigation of environmental risk (including climate change) and optimisation of long term ecological restoration. The submission must demonstrate how the hierarchy of environmental impact has been applied, within the context of latest knowledge and best practice, including justification for not selecting lower impact options when life extension is not proposed.

8.2. The submission needs to demonstrate there will be no discarding of materials likely to be classified as waste as such proposals would be unacceptable under waste management licensing. Further guidance can be found in Is it waste - Understanding the definition of waste.

I trust these comments are of assistance – please do not hesitate to contact me if you require any further information.

Regards
Alasdair

Alasdair Milne
Senior Planning Officer
SEPA, Angus Smith Building, 6 Parklands Avenue, Eurocentral, Holytown, North Lanarkshire, ML1 4WQ
Mobile 07827 978405

Arqiva
Crawley Court
Winchester SO21 2QA

T: +44 (0)333 032 8000
www.arqiva.com

Energy Consents Unit
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

25th August 2023

Dear Sir / Madam

ECU Reference: ECU00004900
Project Name: Lairdmannoch Energy Park

PROPOSED DEVELOPMENT: The Proposed Development will consist of nine wind turbines (up to 180m tip height), ground mounted solar panels, battery energy storage, access tracks, and associated infrastructure.

**Response by Arqiva : Comments on the Scoping Report with regards to television reception**

We refer to the above scoping report and thank you for the opportunity to comment upon it and the above development.

Arqiva is responsible for providing the transmission network for the BBC, STV, Channel 4 and Channel 5 (collectively, the Public Service Broadcasters) along with the majority of the UK's radio companies and is responsible for ensuring the integrity of Re-Broadcast Links. Tall infrastructure such as wind turbines and other tall strucutres have the potential to block radio transmission links and rebroadcasting links (through direct blocking of radio signal or deflecting signal). Our radio transmission networks normally operate with a 100m buffer either side of a radio link, free from interference by a tall development.

Arqiva wish to respond to the following questions within section 5.10.5 (p71):

- Is the proposed scope and impact assessment methodology acceptable?
- Is it acceptable to scope out potential effects to television reception from the EIA?

Question – Is the proposed scope and impact assessment methodology acceptable?

Arqiva Response – With regards to the television and telecommunications links operated by Arqiva, we can confirm that we have no concern or objection to the locations of the turbines listed in Table 1 on P5/6 of the EIA Scoping Report. The nearest television RBL link is approximately 6km south of the development. However, we would request that Arqiva are reconsulted if there is a change in the location of the turbines, to our inbox windfarms@arqiva.com

Question – Is it acceptable to scope out potential effects to television reception from the EIA?

Arqiva Response – Arqiva do not usually comment upon the specific impact of wind farm developments upon domestic television reception. However, although we would agree that the adverse effects of wind turbines on television reception are diminished since digital switchover, we do not consider the likelihood of significant effects to be minimal. If a wind turbine is close to the direct path between a transmitter and a digital television receive antenna, it is likely that a viewer will suffer significantly degraded television reception, with either no reception or highly annoying signal break up. This risk is increased with multiple wind turbines creating complex reflections if several turbines are close to the direct path.

Given the location of this wind farm development, the specific risk to households in this case is likely to be low, but would require a more detailed study in order to confirm. This is not a service Arqiva provide, but there are specialist organisations who will undertake such studies.

In circumstances where wind farm developments cause degredation to domestic digital terrestrial television (DTT) reception, Arqiva believe it is incumbent on the developer to mitigate and restore viewer reception, regardless of whether a study has been undertaken or not.

Arqiva do not have any further response to any of the other questions within the EIA.

Yours sincerely

Neal Ackroyd
Head of Spectrum

**From:** Windfarms
**To:** Steven McClernon
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park
**Date:** 07 September 2023 08:15:36
**Attachments:** image001.png

---

Dear Steven,

I am responding to an email of **01-09-2023**, regarding the above named proposed development.

The above application has now been examined in relation to UHF Radio Scanning Telemetry communications used by our Client in that region and we are happy to inform you that we have **NO OBJECTION** to your proposal.

*Atkins Limited is responsible for providing Wind Farm/Turbine support services to TAUWI.*

*Atkins Limited is responsible for providing Wind Farm/Turbine support services to the Telecommunications Association of the UK Water Industry.* Web: www.tauwi.co.uk
**Windfarm Support**
**ATKINS**
The official engineering design services provider
for the London 2012 Olympic and Paralympic Games
Web: www.atkinsglobal.com/communications



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**From:** Steven.McClernon2@gov.scot <Steven.McClernon2@gov.scot>
**Sent:** 01 September 2023 15:58
**To:** Windfarms <windfarms@atkinsglobal.com>
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park

Good morning,

Please find below the co-ordinates for each proposed turbine –

1. 264635 561845
2. 264372 562139
3. 264377 562615
4. 263918 562673
5. 263713 562142
6. 265050 561218
7. 264670 561387
8. 265247 562674
9. 265451 562325

Thanks.

Kind regards,

Steven McClernon
Senior Case Officer

Onshore Electricity, Strategy and Consents
Directorate for Energy and Climate Change | Scottish Government | 5 Atlantic Quay, 150 Broomielaw, Glasgow G2 8LU
e: steven.mcclernon2@gov.scot | m: 07342 068004

To view the Energy Consents team's current casework please visit www.energyconsents.scot.
To read the Energy Consents team's privacy notice on how personal information is used, please visit http://www.energyconsents.scot/Documentation.aspx

Scottish Government
Riaghaltas na h-Alba
gov.scot

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**From:** Windfarms <windfarms@atkinsglobal.com>
**Sent:** Thursday, August 31, 2023 6:34 AM
**To:** Steven McClernon <Steven.McClernon2@gov.scot>
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park

Dear Steven,

Thanks for reaching us. We are unable to access the link to fetch the documents.
In order to process your application, and obtain the best results, could you please provide us the turbines information if any, in the following manner:-

- 12 character UK NGR, e.g. (SP 12345 12345) or
- Grid Co-ordinates e.g. (123456 123456) for each turbine.
- Site Name/Town
- Email address for reply

Or Provide us Site Centre NGR and a search radius to encompass all the turbines.

***Atkins Limited is responsible for providing Wind Farm/Turbine support services to the Telecommunications Association of the UK Water Industry (TAUWI).***

*Atkins Limited is responsible for providing Wind Farm/Turbine support services to the Telecommunications Association of the UK Water Industry.* Web: www.tauwi.co.uk
**Windfarm Support**
**ATKINS**
The official engineering design services provider
for the London 2012 Olympic and Paralympic Games
Web: www.atkinsglobal.com/communications



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**From:** Steven.McClernon2@gov.scot <Steven.McClernon2@gov.scot>
**Sent:** 23 August 2023 18:42
**To:** Econsents_Admin@gov.scot; Lauren.kellaway@atmosconsulting.com
**Subject:** Request for Scoping Opinion Lairdmannoch Energy Park

Dear Consultee,

**ELECTRICITY ACT 1989**
**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

On 15th of August 2023, Atmos Consulting on behalf Wind 2 Project 4 Limited (the Applicant), submitted a request for a scoping opinion from the Scottish Ministers for the proposed section 36 application for Lairdmannoch Energy Park. The proposed development is for 9 wind turbines 180 m, blade to tip height, located 7 km north east of Gatehouse of Fleet and 10 km west of Castle Douglas in the planning authority area of Dumfries and Galloway in line with regulation 12 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

Under regulation 12, Scottish Ministers are required to provide a scoping opinion outlining the information they consider should be included in the EIA report. Ministers are also required to consult the relevant consultation bodies and any other interested party which is likely to have an interest in the proposed development by reason of its specific environmental responsibilities or local and regional competencies.

The scoping report and supporting information can be viewed at the Scottish Government's Energy Consents Unit website www.energyconsents.scot by:

- clicking on ***Search*** tab; then,
- clicking on ***Simple Search*** tab; then,
- typing **Lairdmannoch Energy Park** into ***Search by Project Name*** box then clicking on ***Go***;
- then clicking on **EC00004900** and then click on ***Documents*** tab.

The indicative wind turbine OS grid co-ordinates, rotor diameter and hub height details can be found at **Table 1**, **pages 5 and 6** of the Scoping Report.

**To allow Scottish Ministers to provide a comprehensive scoping opinion, we ask that you review the scoping report and advise on the scope of the environmental impact assessment for this proposal. Please advise if there are any further matters you would like Ministers to highlight for consideration and inclusion in the assessment, particularly site-specific information.**

I would be grateful for your comments by **13th September 2023.** Please note that reminders will not be issued, therefore if we have not received any comments from you, nor a request for an extension to this date, we will assume that you have no comments to make.

Please send your response (in PDF format if possible) to steven.mcclernon2@gov.scot

Kind regards,

Steven McClernon
Senior Case Officer
Onshore Electricity, Strategy and Consents
Directorate for Energy and Climate Change | Scottish Government | 5 Atlantic Quay, 150 Broomielaw, Glasgow G2 8LU
e: steven.mcclernon2@gov.scot | m: 07342 068004

To view the Energy Consents team's current casework please visit www.energyconsents.scot.
To read the Energy Consents team's privacy notice on how personal information is used, please visit http://www.energyconsents.scot/Documentation.aspx

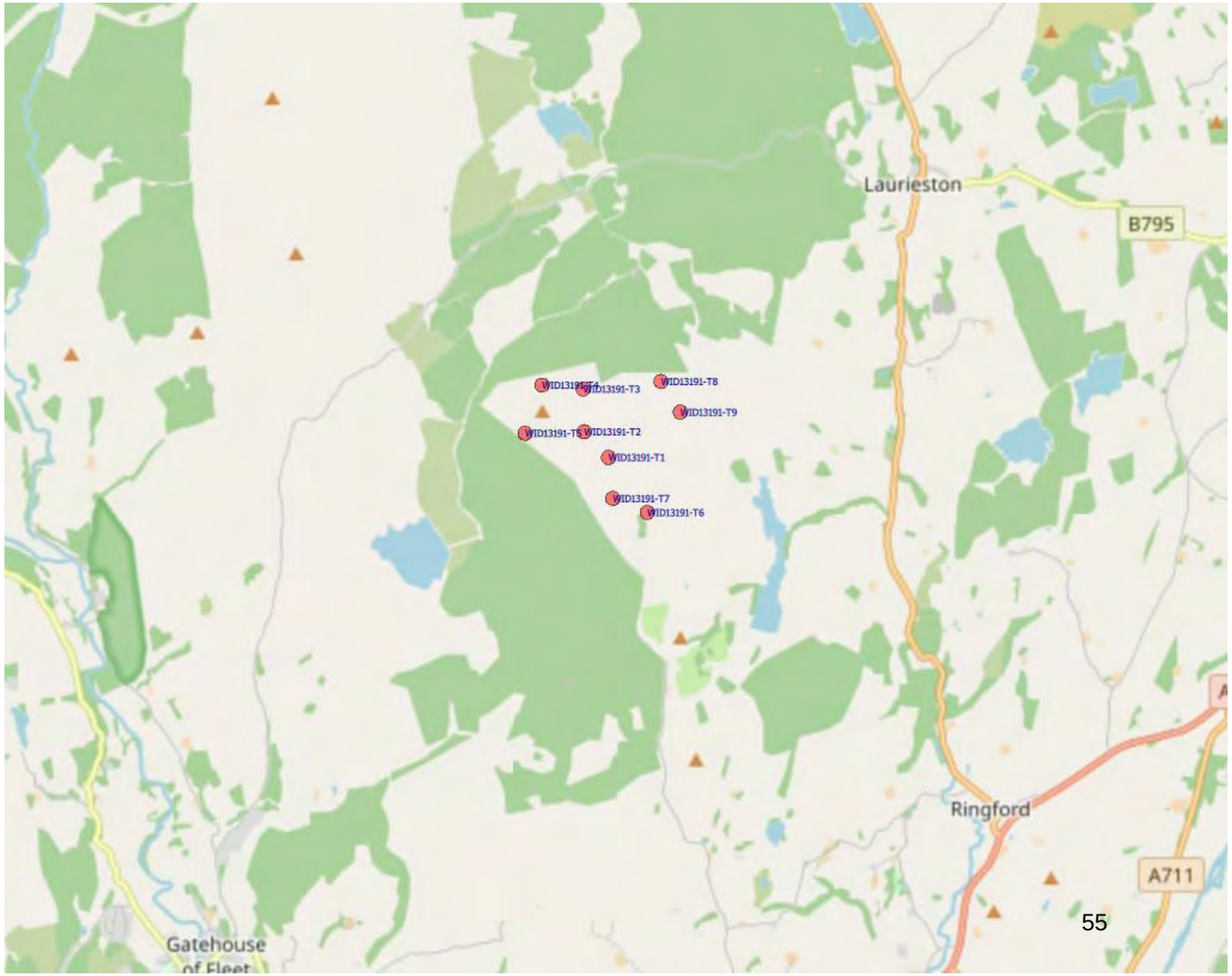
order to secure the effective operation of the system and for other lawful purposes. The views or opinions contained within this e-mail may not necessarily reflect those of the Scottish Government.
**********
**

OUR REF:- WID13191

We have studied the proposed windfarm development with respect to EMC and related problems to BT point-to-point microwave radio links.

The conclusion is that the Project indicated should not cause interference to BT’s current and presently planned radio network.

T1 264635 561845
T2 264372 562139
T3 264377 562615
T4 263918 562673
T5 263713 562142
T6 265050 561218
T7 264670 561387
T8 265247 562674
T9 265451 562325



Kaye Noble
Assistant Safeguarding Manager
Ministry of Defence
Safeguarding Department
St George's House
DIO Headquarters
DMS Whittington
Lichfield
Staffordshire
WS14 9PY

Telephone [MOD]: redacted

E-mail: Kaye.noble106@mod.gov.uk

**Your Reference: ECU00004900**

**Our Reference: DIO 10059688**

Steve McClernon
Scottish Government
Energy Consents Unit
4th Floor
Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

13 September 2023

**By email only**

Dear Steve,

| | |
|---|---|
| Application reference: | ECU00004900 |
| Site Name: | Lairdmannoch Energy Park |
| Proposal: | The Proposed Development will consist of nine wind turbines (up to 180m tip height), ground mounted solar panels, battery energy storage, access tracks, and associated infrastructure. |
| Site address: | Located approximately 7km northeast of Gatehouse of Fleet and 10km west of Castle Douglas in Dumfries and Galloway |

Thank you for consulting the Ministry of Defence (MOD) in relation to the Scoping application through your communication dated 23rd August 2023.

The Defence Infrastructure Organisation (DIO) Safeguarding Team represents the MOD as a consultee in UK planning and energy consenting systems to ensure that development does not compromise or degrade the operation of defence sites such as aerodromes, explosives storage sites, air weapon ranges, and technical sites or training resources such as the Military Low Flying System.

I am writing to advise you that the MOD has concerns with the proposal.

The proposal concerns a development of 7 turbines with maximum blade tip heights of 180.00 metres above ground level. The proposed development has been assessed using the location data (Grid References) below provided in “Lairdmannoch Scoping Report” dated August 2023.

| Turbine no. | Easting | Northing |
|---|---|---|
| 1 | 264635 | 561845 |
| 2 | 264372 | 562139 |
| 3 | 264377 | 562615 |
| 4 | 363918 | 562673 |
| 5 | 263713 | 562142 |
| 6 | 265050 | 561218 |
| 7 | 264670 | 561387 |
| 8 | 265247 | 562674 |
| 9 | 265451 | 562325 |

The principal safeguarding concerns of the MOD with respect to this development of wind turbines relates to their potential to create a physical obstruction to air traffic movements.

**Physical Obstruction**

In this case the development falls within Tactical Training Area 20T (TTA 20T), an area within which fixed wing aircraft may operate as low as 100 feet or 30.5 metres above ground level to conduct low level flight training. The addition of turbines in this location has the potential to introduce a physical obstruction to low flying aircraft operating in the area.

If the developer is able to overcome the issues stated above, to address the impact up on low flying given the location and scale of the development, the MOD would require that conditions are added to any consent issued requiring that the development is fitted with aviation safety lighting and that sufficient data is submitted to ensure that structures can be accurately charted to allow deconfliction.

The development proposed includes wind turbine generators and/or meteorological mast(s) that exceed a height of 150m agl and are therefore subject to the lighting requirements set out in the Air Navigation Order 2016. In addition to CAA requirements, the MOD will require the submission, approval, and implementation of an aviation safety lighting specification that details the installation of MOD accredited aviation safety lighting.

**Summary**

The MOD has concerns with this proposal for the following reasons:

- The potential to create a physical obstruction to air traffic movements.

The MOD must emphasise that the advice provided within this letter is in response to the data and information detailed in the developer's document titled "Lairdmannoch Scoping Report", "Site Layout" and "Site Location" dated August 2023. Any variation of the parameters (which include the location, dimensions, form, and finishing materials) detailed may significantly alter how the development relates to MOD safeguarding requirements and cause adverse impacts to safeguarded defence assets or capabilities. In the event that any amendment, whether considered material or not by the determining authority, is submitted for approval, the MOD should be consulted and provided with adequate time to carry out assessments and provide a formal response.

I hope this adequately explains our position on the matter. If you require further information or would like to discuss this matter further, please do not hesitate to contact me.

Further information about the effects of wind turbines on MOD interests can be obtained from the following websites:

***MOD*:** https://www.gov.uk/government/publications/wind-farms-ministry-of-defence-safeguarding

Yours sincerely

Redacted

Kaye Noble
Assistant Safeguarding Manager
DIO Safeguarding

## Joyce Melrose

**From:** Safe Guarding <safeguarding@edinburghairport.com>
**Sent:** 24 August 2023 14:34
**To:** Econsents Admin; McClernon S (Steven)
**Cc:** Safe Guarding
**Subject:** ECU00004900 - Lairdmannoch Energy Park

Good afternoon,

In respect of the above, I can confirm the location of this development falls out with our Aerodrome Safeguarding zone for Edinburgh Airport therefore we have no objection/comment.

With best regards,
Claire

**Claire Brown**
Aerodrome Safeguarding & Compliance Officer

Edinburgh Airport
Where Scotland meets the world

Our values

t: +44 (0)131 344 3845 m: 07771 842927
www.edinburghairport.com

Edinburgh Airport Limited
Room 3/54, 2nd Floor Terminal Building
EH12 9DN, Scotland

| | |
|---|---|
| **From:** | #GLA Safeguarding |
| **To:** | Steven McClernon |
| **Subject:** | RE: Request for Scoping Opinion Lairdmannoch Energy Park |
| **Date:** | 04 September 2023 15:53:57 |
| **Attachments:** | image001.png<br>image552682.png<br>image427029.png<br>image024553.png<br>image786921.png<br>image291482.png<br>image251004.png |

This proposal is located outwith the consultation zone for Glasgow Airport. As such we have no comment to make and need not be consulted further.

Kind regards
Kirsteen

#GLA Safeguarding
**#GLA Safeguarding**

07808 115 881
glasafeguard@glasgowairport.com
www.glasgowairport.com

Glasgow Airport, Erskine Court, St Andrews Drive, Paisley, PA3 2TJ




**From:** Steven.McClernon2@gov.scot <Steven.McClernon2@gov.scot>
**Sent:** 23 August 2023 14:12
**To:** Econsents_Admin@gov.scot; Lauren.kellaway@atmosconsulting.com
**Subject:** Request for Scoping Opinion Lairdmannoch Energy Park



Dear Consultee,

**ELECTRICITY ACT 1989**
**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

On 15th of August 2023, Atmos Consulting on behalf Wind 2 Project 4 Limited (the Applicant), submitted a request for a scoping opinion from the Scottish Ministers for the proposed section 36 application for Lairdmannoch Energy Park. The proposed

development is for 9 wind turbines 180 m, blade to tip height, located 7 km north east of Gatehouse of Fleet and 10 km west of Castle Douglas in the planning authority area of Dumfries and Galloway in line with regulation 12 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

Under regulation 12, Scottish Ministers are required to provide a scoping opinion outlining the information they consider should be included in the EIA report. Ministers are also required to consult the relevant consultation bodies and any other interested party which is likely to have an interest in the proposed development by reason of its specific environmental responsibilities or local and regional competencies.

The scoping report and supporting information can be viewed at the Scottish Government's Energy Consents Unit website www.energyconsents.scot by:

- clicking on ***Search*** tab; then,
- clicking on ***Simple Search*** tab; then,
- typing **Lairdmannoch Energy Park** into ***Search by Project Name*** box then clicking on ***Go***;
- then clicking on **EC00004900** and then click on ***Documents*** tab.

The indicative wind turbine OS grid co-ordinates, rotor diameter and hub height details can be found at **Table 1**, **pages 5 and 6** of the Scoping Report.

**To allow Scottish Ministers to provide a comprehensive scoping opinion, we ask that you review the scoping report and advise on the scope of the environmental impact assessment for this proposal. Please advise if there are any further matters you would like Ministers to highlight for consideration and inclusion in the assessment, particularly site-specific information.**

I would be grateful for your comments by **13th September 2023.** Please note that reminders will not be issued, therefore if we have not received any comments from you, nor a request for an extension to this date, we will assume that you have no comments to make.

Please send your response (in PDF format if possible) to steven.mcclernon2@gov.scot

Kind regards,

Steven McClernon
Senior Case Officer
Onshore Electricity, Strategy and Consents
Directorate for Energy and Climate Change | Scottish Government | 5 Atlantic Quay, 150 Broomielaw, Glasgow G2 8LU
e: steven.mcclernon2@gov.scot | m: 07342 068004

To view the Energy Consents team's current casework please visit www.energyconsents.scot.
To read the Energy Consents team's privacy notice on how personal information is used, please visit http://www.energyconsents.scot/Documentation.aspx

| | |
|---|---|
| **From:** | Ian Hutchinson |
| **To:** | Steven McClernon; Econsents Admin |
| **Cc:** | Safeguarding |
| **Subject:** | RE: External - Request for Scoping Opinion Lairdmannoch Energy Park |
| **Date:** | 24 August 2023 08:05:33 |
| **Attachments:** | image001.png |

Hi Steven,

On behalf of Glasgow Prestwick Airport (GPA), I have reviewed the documentation available on the ECU portal for Lairdmannoch Energy Park (ECU00004900)

The proposed development benefits from a substantial level of terrain shielding from the GPA Primary Surveillance Radar and is well clear of the GPA Instrument Landing System and all Instrument Flight Procedures and protected surfaces.

Consequently, we would have no comment or valid objection to make regarding the proposal.

Kind regards,

Ian


Logo

Glasgow Prestwick Airport Ltd.
Aviation House
Prestwick
KA9 2PL
Scotland
United Kingdom

Ian Hutchinson
Aviation Safeguarding Manager

T: (+44) 01292 511038
M:

ihutchinson@glasgowprestwick.com

www.glasgowprestwick.com


**From:** Steven.McClernon2@gov.scot <Steven.McClernon2@gov.scot>
**Sent:** Wednesday, August 23, 2023 2:12 PM
**To:** Econsents_Admin@gov.scot; Lauren.kellaway@atmosconsulting.com
**Subject:** External - Request for Scoping Opinion Lairdmannoch Energy Park



Dear Consultee,

**ELECTRICITY ACT 1989**
**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

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Under regulation 12, Scottish Ministers are required to provide a scoping opinion outlining the information they consider should be included in the EIA report. Ministers are also required to consult the relevant consultation bodies and any other interested party which is likely to have an interest in the proposed development by reason of its specific environmental responsibilities or local and regional competencies.

The scoping report and supporting information can be viewed at the Scottish Government's Energy Consents Unit website www.energyconsents.scot by:

- clicking on ***Search*** tab; then,
- clicking on ***Simple Search*** tab; then,
- typing **Lairdmannoch Energy Park** into ***Search by Project Name*** box then clicking on ***Go***;
- then clicking on **EC00004900** and then click on ***Documents*** tab.

The indicative wind turbine OS grid co-ordinates, rotor diameter and hub height details can be found at **Table 1**, **pages 5 and 6** of the Scoping Report.

**To allow Scottish Ministers to provide a comprehensive scoping opinion, we ask that you review the scoping report and advise on the scope of the environmental impact assessment for this proposal. Please advise if there are any further matters you would like Ministers to highlight for consideration and inclusion in the assessment, particularly site-specific information.**

I would be grateful for your comments by **13th September 2023.** Please note that reminders will not be issued, therefore if we have not received any comments from you, nor a request for an extension to this date, we will assume that you have no comments to make.

Please send your response (in PDF format if possible) to steven.mcclernon2@gov.scot

Kind regards,

Steven McClernon
Senior Case Officer
Onshore Electricity, Strategy and Consents
Directorate for Energy and Climate Change | Scottish Government | 5 Atlantic Quay, 150 Broomielaw, Glasgow G2 8LU
e: steven.mcclernon2@gov.scot | m: 07342 068004

To view the Energy Consents team's current casework please visit www.energyconsents.scot.
To read the Energy Consents team's privacy notice on how personal information is used, please visit http://www.energyconsents.scot/Documentation.aspx

## Joyce Melrose

**From:** Safeguarding <Safeguarding@hial.co.uk>
**Sent:** 15 September 2023 09:12
**To:** McClernon S (Steven); Econsents Admin; Lauren.kellaway@atmosconsulting.com
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park

**Your Ref: EC00004900**
**Our Ref: 2023/245/CAL**

Dear Sir/Madam,

**Proposal: REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

With reference to the above proposal, our preliminary assessment shows that, at the given position and height, this development would not infringe the safeguarding criteria and operation of Campbeltown Airport.

Therefore, Highlands and Islands Airports Limited has no objections to the proposal.

Kind regards,

Nyree Millar-Bell
Aerodrome Safeguarding and Operations Support
Highlands and Islands Airport Limited

| | |
|---|---|
| **From:** | JRC Windfarm Coordinations Old |
| **To:** | Steven McClernon |
| **Cc:** | WindSPEN |
| **Subject:** | Lairdmannoch Energy Park- Request for Scoping Opinion [WF803553] |
| **Date:** | 24 August 2023 07:56:19 |

Dear steven,

A Windfarms Team member has replied to your co-ordination request, reference **WF803553** with the following response:

***Please do not reply to this email - the responses are not monitored.***
***If you need us to investigate further, then please use the link at the end of this response or login to your account for access to your co-ordination requests and responses.***

---

*Dear Steven,*

***Site Name**: Lairdmannoch Energy Park*

***REF:** EC00004900*

***Turbine(s) at NGR**:*

*1 264635 561845*
*2 264372 562139*
*3 264377 562615*
*4 263918 562673*
*5 263713 562142*
*6 265050 561218*
*7 264670 561387*
*8 265247 562674*
*9 265451 562325*

***Hub Height**: 102.5m **Rotor Radius**: 77.5m*

*This proposal is ***cleared*** with respect to radio link infrastructure operated by the local energy networks.*

*JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry. This is to assess their potential to interfere with radio systems operated by utility companies in support of their regulatory operational requirements.*

*In the case of this proposed wind energy development, JRC does not foresee any potential problems based on known interference scenarios and the data you have provided. However, if any details of the wind farm change, particularly the disposition or scale of any turbine(s), it will be necessary to re-evaluate the proposal. Please note that due to the large number of adjacent radio links in this vicinity, which have been taken into account, clearance is given specifically for a location within the declared grid reference (quoted above).*

*In making this judgement, JRC has used its best endeavours with the available data, although we recognise that there may be effects which are as yet unknown or inadequately predicted. JRC cannot therefore be held liable if subsequently problems arise that we have not predicted.*

*It should be noted that this clearance pertains only to the date of its issue. As the use of the spectrum is dynamic, the use of the band is changing on an ongoing basis and consequently, you are advised to seek re-coordination prior to submitting a planning application, as this will negate the possibility of an objection being raised at that time as a consequence of any links assigned between your enquiry and the finalisation of your project.*

*JRC offers a range of radio planning and analysis services. If you require any assistance, please contact us by phone or email.*

*Regards*

*Wind Farm Team*

*Friars House*
*Manor House Drive*
*Coventry CV1 2TE*
*United Kingdom*

*Office: 02476 932 185*



We hope this response has sufficiently answered your query.
If not, please **do not send another email** as you will go back to the end of the mail queue, which is not what you or we need. Instead, **reply to this email by clicking on the link below or login to your account** for access to your co-ordination requests and responses.

https://breeze.jrc.co.uk/tickets/view.php?id=31253

## Joyce Melrose

**From:** Tim Allott <tim.allott@metoffice.gov.uk> on behalf of metofficesafeguarding <metofficesafeguarding@metoffice.gov.uk>
**Sent:** 07 September 2023 15:17
**To:** McClernon S (Steven); Econsents Admin; Lauren.kellaway@atmosconsulting.com
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park

Dear Steven,
Thanks for contacting the Met Office. The proposed development is well beyond the 20 km radius consultation zone of any Met Office radar. Therefore we have no comments on the proposal and do not need to be consulted further.
Kind regards,

Tim Allott
Upper Air Observations
**Met Office,** FitzRoy Road, Exeter, Devon, EX1 3PB, United Kingdom
E-mail: metofficesafeguarding@metoffice.gov.uk
Web: https://www.metoffice.gov.uk/services/business-industry/energy/safeguarding

| | |
|---|---|
| **From:** | Martin French |
| **To:** | Steven McClernon; Econsents Admin; Lauren.kellaway@atmosconsulting.com |
| **Cc:** | Windfarms |
| **Subject:** | RE: Request for Scoping Opinion Lairdmannoch Energy Park |
| **Date:** | 23 August 2023 21:00:33 |
| **Attachments:** | image001.png |

Many thanks for your enquiry

There are no existing links within a 10km radius of your proposed development, so we therefore have no objection regarding the proposal.

Thank you
Wind Farm co-ordination

**From:** Steven.McClernon2@gov.scot <Steven.McClernon2@gov.scot>
**Sent:** Wednesday, August 23, 2023 2:12 PM
**To:** Econsents_Admin@gov.scot; Lauren.kellaway@atmosconsulting.com
**Subject:** Request for Scoping Opinion Lairdmannoch Energy Park



Dear Consultee,

**ELECTRICITY ACT 1989**
**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

On 15th of August 2023, Atmos Consulting on behalf Wind 2 Project 4 Limited (the Applicant), submitted a request for a scoping opinion from the Scottish Ministers for the proposed section 36 application for Lairdmannoch Energy Park. The proposed development is for 9 wind turbines 180 m, blade to tip height, located 7 km north east of Gatehouse of Fleet and 10 km west of Castle Douglas in the planning authority area of Dumfries and Galloway in line with regulation 12 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

Under regulation 12, Scottish Ministers are required to provide a scoping opinion outlining the information they consider should be included in the EIA report. Ministers are also required to consult the relevant consultation bodies and any other interested party which is likely to have an interest in the proposed development by reason of its specific environmental responsibilities or local and regional competencies.

The scoping report and supporting information can be viewed at the Scottish Government's Energy Consents Unit website www.energyconsents.scot by:

- clicking on ***Search*** tab; then,
- clicking on ***Simple Search*** tab; then,
- typing **Lairdmannoch Energy Park** into ***Search by Project Name*** box then clicking

on ***Go***;
- then clicking on **EC00004900** and then click on ***Documents*** tab.

The indicative wind turbine OS grid co-ordinates, rotor diameter and hub height details can be found at **Table 1**, **pages 5 and 6** of the Scoping Report.

**To allow Scottish Ministers to provide a comprehensive scoping opinion, we ask that you review the scoping report and advise on the scope of the environmental impact assessment for this proposal. Please advise if there are any further matters you would like Ministers to highlight for consideration and inclusion in the assessment, particularly site-specific information.**

I would be grateful for your comments by **13th September 2023.** Please note that reminders will not be issued, therefore if we have not received any comments from you, nor a request for an extension to this date, we will assume that you have no comments to make.

Please send your response (in PDF format if possible) to steven.mcclernon2@gov.scot

Kind regards,

Steven McClernon
Senior Case Officer
Onshore Electricity, Strategy and Consents
Directorate for Energy and Climate Change | Scottish Government | 5 Atlantic Quay, 150 Broomielaw, Glasgow G2 8LU
e: steven.mcclernon2@gov.scot | m: 07342 068004

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To read the Energy Consents team's privacy notice on how personal information is used, please visit http://www.energyconsents.scot/Documentation.aspx

Scottish Government
Riaghaltas na h-Alba
gov.scot

**********

**********
**

## Joyce Melrose

**From:** NATS Safeguarding <NATSSafeguarding@nats.co.uk>
**Sent:** 29 August 2023 14:28
**To:** McClernon S (Steven)
**Cc:** Econsents Admin
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park [SG33595]
**Attachments:** SG33595 Lairdmannoch Wind Farm - TOPA Issue 2.pdf

Our Ref: SG33595

Dear Sir/Madam

We refer to the application above. The proposed development has been examined by our technical safeguarding teams and conflicts with our safeguarding criteria.

Accordingly, NATS (En Route) plc **objects to the proposal**. The reasons for NATS's objection are outlined in the attached report TOPA SG33595.

We would like to take this opportunity to draw your attention to the legal obligation of local authorities to consult NATS before granting planning permission. The obligation to consult arises in respect of certain applications that would affect a technical site operated by or on behalf of NATS (such sites being identified by safeguarding plans that are issued to local planning authorities).

In the event that any recommendations made by NATS are not accepted, local authorities are obliged to follow the relevant directions within Planning Circular 2 2003 - Scottish Planning Series: Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) (Scotland) Direction 2003 or Annex 1 - The Town And Country Planning (Safeguarded Aerodromes, Technical Sites And Military Explosives Storage Areas) Direction 2002.

These directions require that the planning authority notify both NATS and the Civil Aviation Authority ("CAA") of their intention. As this further notification is intended to allow the CAA to consider whether further scrutiny is required, the notification should be provided prior to any granting of permission.

It should also be noted that the failure to consult NATS, or to take into account NATS's comments when determining a planning application, could cause serious safety risks for air traffic.

Should you have any queries, please contact us using the details below.

Prepared by:
NATS Safeguarding Office

# Technical and Operational Assessment (TOPA)

## For Lairdmannoch Energy Park

## Wind Farm Development

## NATS ref: SG33595

## Issue 2

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## Publication History

| Issue | Month/Year | Change Requests and summary |
|---|---|---|
| 1 | July 2022 | En-Route Pre-Planning Assessment |
| 2 | August 2023 | Scoping Request |

## Document Use

External use: Yes

## Referenced Documents

# 1. Background

## 1.1. En-route Consultation

NATS en-route plc is responsible for the safe and expeditious movement in the en-route phase of flight for aircraft operating in controlled airspace in the UK. To undertake this responsibility it has a comprehensive infrastructure of RADAR's, communication systems and navigational aids throughout the UK, all of which could be compromised by the establishment of a wind farm.

In this respect NATS is responsible for safeguarding this infrastructure to ensure its integrity to provide the required services to Air Traffic Control (ATC).

In order to discharge this responsibility NATS is a statutory consultee for all wind farm applications, and as such assesses the potential impact of every proposed development in the UK.

The technical assessment sections of this document define the assessments carried out against the development proposed in section 3.

# 2. Scope

This report provides NATS En-Route plc's view on the proposed application in respect of the impact upon its own operations and in respect of the application details contained within this report.

Where an impact is also anticipated on users of a shared asset (e.g. a NATS RADAR used by airports or other customers), additional relevant information may be included for information only. While an endeavour is made to give an insight in respect of any impact on other aviation stakeholders, it should be noted that this is outside of NATS' statutory obligations and that any engagement in respect of planning objections or mitigation should be had with the relevant stakeholder, although NATS as the asset owner may assist where possible.

# 3. Application Details

Scottish Government submitted a request for a NATS technical and operational assessment (TOPA) for the development at Lairdmannoch Wind Farm. It will comprise turbines as detailed in Table 1 and contained within an area as shown in the diagrams contained in Appendix B.

| Turbine | Lat | Long | East | North | Hub Height (m) | Tip Height (m) |
|---|---|---|---|---|---|---|
| 1 | 54.9329 | -4.1142 | 264635 | 561845 | 102.5 | 180 |
| 2 | 54.9354 | -4.1185 | 264372 | 562139 | 102.5 | 180 |
| 3 | 54.9397 | -4.1186 | 264377 | 562615 | 102.5 | 180 |
| 4 | 54.9401 | -4.1258 | 263918 | 562673 | 102.5 | 180 |
| 5 | 54.9353 | -4.1287 | 263713 | 562142 | 102.5 | 180 |
| 6 | 54.9273 | -4.1075 | 265050 | 561218 | 102.5 | 180 |
| 7 | 54.9288 | -4.1135 | 264670 | 561387 | 102.5 | 180 |
| 8 | 54.9405 | -4.1051 | 265247 | 562674 | 102.5 | 180 |
| 9 | 54.9374 | -4.1017 | 265451 | 562325 | 102.5 | 180 |

Table 1 – Turbine Details

# 4. Assessments Required

The proposed development falls within the assessment area of the following systems:

| En-route Surv | Lat | Long | nm | km | Az (deg) | Type |
|---|---|---|---|---|---|---|
| Clee Hill Radar | 52.3983 | -2.5975 | 161.2 | 298.6 | 341.1 | CMB |
| Great Dun Fell Radar | 54.6841 | -2.4509 | 59.3 | 109.8 | 285.3 | CMB |
| Lowther Hill Radar | 55.3778 | -3.7530 | 28.9 | 53.6 | 205.2 | CMB |
| Perwinnes Radar | 57.2123 | -2.1309 | 151.8 | 281.2 | 206.8 | CMB |
| Tiree Radar | 56.4556 | -6.9230 | 131.6 | 243.7 | 132.6 | CMB |
| En-route Nav | Lat | Long | nm | km | Az (deg) | Type |
| None | | | | | | |
| En-route AGA | Lat | Long | nm | km | Az (deg) | Type |
| None | | | | | | |

Table 2 – Impacted Infrastructure

## 4.1. En-route RADAR Technical Assessment

### 4.1.1. Predicted Impact on Lowther RADAR

Using the theory as described in Appendix A and development specific propagation profile it has been determined that the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated.

### 4.1.2. Predicted Impact on Great Dun Fell RADAR

Using the theory as described in Appendix A and development specific propagation profile it has been determined that the terrain screening available will not adequately attenuate the signal, and therefore this development is likely to cause false primary plots to be generated. A reduction in the RADAR's probability of detection, for real aircraft, is also anticipated.

### 4.1.3. En-route operational assessment of RADAR impact

Where an assessment reveals a technical impact on a specific NATS' RADAR, the users of that RADAR are consulted to ascertain whether the anticipated impact is acceptable to their operations or not.

| Unit or role | Comment |
|---|---|
| Prestwick Centre ATC | Unacceptable |
| Military ATC | Unacceptable |

*Note: The technical impact, as detailed above, has also been passed to non-NATS users of the affected RADAR, this may have included other planning consultees such as the MOD or other airports. Should these users consider the impact to be unacceptable it is expected that they will contact the planning authority directly to raise their concerns.*

## 4.2. En-route Navigational Aid Assessment

### 4.2.1. Predicted Impact on Navigation Aids

No impact is anticipated on NATS' navigation aids.

## 4.3. En-route Radio Communication Assessment

### 4.3.1. Predicted Impact on the Radio Communications Infrastructure

No impact is anticipated on NATS' radio communications infrastructure.

# 5. Conclusions

## 5.1. En-route Consultation

The proposed development has been examined by technical and operational safeguarding teams. A technical impact is anticipated, this has been deemed to be unacceptable.

# Appendix A – Background RADAR Theory

## Primary RADAR False Plots

When RADAR transmits a pulse of energy with a power of $P_t$ the power density, P, at a range of r is given by the equation:

$$P = \frac{G_t P_t}{4\pi r^2}$$

*Where $G_t$ is the gain of the RADAR's antenna in the direction in question.*

If an object at this point in space has a RADAR cross section of σ, this can be treated as if the object re-radiates the pulse with a gain of σ and therefore the power density of the reflected signal at the RADAR is given by the equation:

$$P_a = \frac{\sigma P}{4\pi r^2} = \frac{\sigma G_t P_t}{(4\pi)^2 r^4}$$

The RADAR's ability to collect this power and feed it to its receiver is a function of its antenna's effective area, $A_e$, and is given by the equation:

$$P_r = P_a A_e = \frac{P_a G_r \lambda^2}{4\pi} = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r^4}$$

*Where $G_t$ is the RADAR antenna's receive gain in the direction of the object and $\lambda$ is the RADAR's wavelength.*

In a real world environment this equation must be augmented to include losses due to a variety of factors both internal to the RADAR system as well as external losses due to terrain and atmospheric absorption.

*For simplicity these losses are generally combined in a single variable L*

$$P_r = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r^4 L}$$

## Secondary RADAR Reflections

When modelling the impact on SSR the probability that an indirect signal reflected from a wind turbine has the signal strength to be confused for a real interrogation or reply can determined from a similar equation:

$$P_r = \frac{\sigma G_t G_r \lambda^2 P_t}{(4\pi)^3 r_t^2 r_r^2 L}$$

Where $r_t$ and $r_r$ are the range from RADAR-to-turbine and turbine-to-aircraft respectively. This equation can be rearranged to give the radius from the turbine within which an aircraft must be for reflections to become a problem.

$$r_r = \sqrt{\frac{\lambda^2}{(4\pi)^3}} \sqrt{\frac{\sigma G_t G_r P_t}{r_t^2 P_r L}}$$

## Shadowing

When turbines lie directly between a RADAR and an aircraft not only do they have the potential to absorb or deflect, enough power such that the signal is of insufficient level to be detected on arrival.

It is also possible that azimuth determination, whether this done via sliding window or monopulse, can be distorted giving rise to inaccurate position reporting.

## Terrain and Propagation Modelling

All terrain and propagation modelling is carried out by a software tool called ICS Telecom (version 11.1.7). All calculations of propagation losses are carried out with ICS Telecom configured to use the ITU-R 526 propagation model.

Appendix B – Diagrams

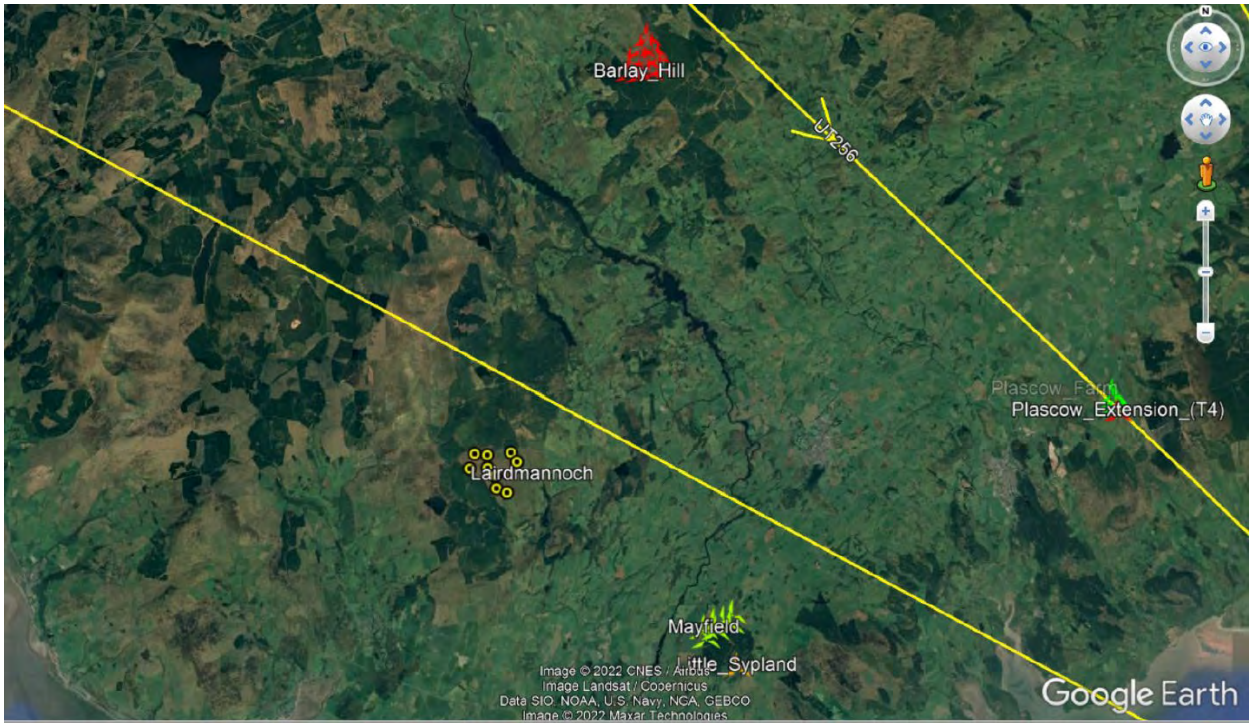


Figure 1: Proposed development location shown on an airways chart

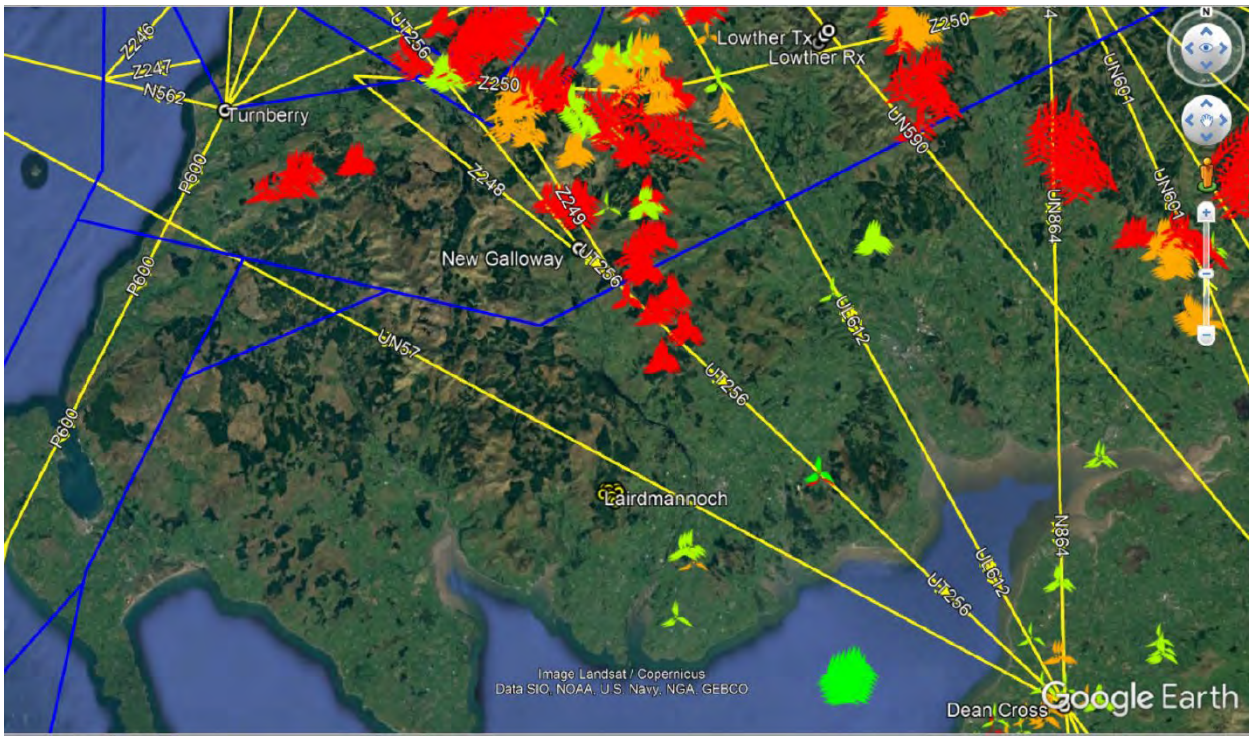


Figure 2: Proposed development shown alongside other recently assessed applications

consented/built | impact –accepted | impact –objection | mitigated
mitigation –proposed | no impact | refused/withdrawn

**Joyce Melrose**

**From:** ONR Land Use Planning <ONR-Land.Use-Planning@onr.gov.uk>
**Sent:** 25 August 2023 13:33
**To:** Econsents Admin
**Subject:** ONR Land Use Planning - Application EC00004900
**Attachments:** image001.png

Dear Sir/Madam,

With regard to planning application EC00004900, ONR makes no comment on this proposed development as it does not lie within a consultation zone around a GB nuclear site.

You can find information concerning our Land Use Planning consultation process here: (http://www.onr.org.uk/land-use-planning.htm).

Kind regards,

Vicki Enston
Land Use Planning
Office for Nuclear Regulation
ONR-Land.Use-planning@onr.gov.uk

----Original Message----
**From:** Steven.McClernon2@gov.scot <steven.mcclernon2@gov.scot >
**To:** econsents_admin@gov.scot;Lauren.kellaway@atmosconsulting.com;
**Cc:**
**Sent:** 23/08/2023 14:12
**Subject:** Request for Scoping Opinion Lairdmannoch Energy Park

Dear Consultee,

Steven McClernon
Senior Case Officer,
Energy Consents Unit,
Scottish Government

Sent by email: steven.mcclernon2@gov.scot

20 October 2023

Dear Steven,

ELECTRICITY ACT 1989
THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017

REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.

Thank you for consulting RSPB Scotland on the Scoping Report for the proposed Lairdmannoch Energy Park in Dumfries and Galloway (ECU00004900). RSPB Scotland is supportive of the use of renewable energy; however, wind farms must be carefully sited to avoid negative impacts on sites and species of conservation importance.

We have the following comments with regard to the ornithology chapter in the Scoping Report. Without prejudice to our recommendations and comments below, we note that more than two years of field surveys has already been completed prior to Scottish Ministers issuing a Scoping Opinion for the EIA. A scoping exercise should help inform survey design and assessment of impacts: it is therefore disappointing to note that surveys have already been undertaken prior to this exercise. We would welcome information as to why this approach has been taken.

Loch Ken and River Dee Marshes Special Protection Area (SPA)

Under the requirements of the Conservation of Habitats and Species Regulations 2017, the competent authority must consider on a precautionary basis whether the proposed project is likely to have a significant effect on the SPA either alone or in combination with other plans or projects.

The closest SPA, the Loch Ken and River Dee Marshes SPA is located approximately 5.2 km from the proposed development site and is designated for supporting internationally

important populations of overwintering Greenland White-fronted Geese and Greylag Geese. These species are vulnerable to collision with onshore windfarms during migration. The proposed development is within the core foraging ranges of these qualifying species, as per Table 2 in NatureScot's guidance on 'Assessing Connectivity with Special Protection Areas (SPAs)' (2016). Furthermore, the proposed development lies between a known roosing site at Loch Whinyeon loch and the SPA overwinter ground which increases the probability that the birds will fly through the proposed development area. Likely significant effects on the SPA therefore cannot be ruled out and the competent authority must carry out an Appropriate Assessment.

We recommend that survey effort as part of the EIA, which will also inform the HRA process, should include evening (dusk) and dawn survey to assess movements of SPA qualifying species Greenland White Fronted Goose in relation to roosting habitat at Loch Whinyeon in relation to this project.

We also recommend that a data request is made to confirm movements of roosting qualifying Greenland White-fronted geese between the Loch Ken and River Dee SPA and Loch Whinyeon to inform the HRA process; for this we recommend contacting Dr Larry Griffin (ecolg2021@gmail.com).

Breeding raptors

We note the reference to consultation with RSPB on sensitive species as part of confidential information (2019) (5.5.1). We ask that this information is provided to RSPB Scotland since we do not have record of this.

Black Grouse

We note that survey effort in both years to record lekking Black Grouse was conducted outside the lekking season in year 2 which is end of March to mid-May. Although we note that the EIAR states that a lek survey in year one was carried out in May it is not specified if this was before mid-May. We therefore, recommend that this survey should be updated with formal lek survey methodology within the lekking season. The status of Black Grouse would be further informed through data request to RSPB Scotland (dataunit@rspb.org.uk) and Forestry and Land Scotland.

Survey work and buffer areas

We note that survey areas were identified based on buffer areas from the turbine array rather than the whole development footprint. NatureScot guidance recommends survey to encompass the entire development area which is not in line with NatureScot Guidance (2017):

*The survey area and design must adequately cover the entire development area, i.e. the largest possible layout, all the alternative layouts and ancillary structures and works. This includes access tracks; borrow pits, electrical substations and grid connections (both underground and overhead). (pg 10).*

Red Kite

We agree that based on the information provided in the Scoping Report that a PVA to assess impact to Red Kite is required.

Collision Risk Modelling

With regard to information provided in Table 9 in the Scoping Report, we are unable to confirm if any other species should be included in the collision risk modelling until we have assessed the full results of all survey effort including VP survey that will be carried out as part of the EIA. There is no detail of the results of Nightjar survey which may require CR assessment.

Cumulative impact assessment

We recommend that the cumulative assessment should include all projects within the search area, including new forestry/woodland creation.

NPF4 – delivering positive effects for biodiversity.

The nature and climate crisis are inextricably linked, and action must address this at the scale and pace required. RSPB Scotland welcomes the requirement in NPF4 policy 3 that development proposals contribute to the enhancement of biodiversity. Any potential adverse impacts including cumulative impacts on biodiversity, nature networks, and the natural environment should be minimised through careful planning and design.

In particular policy 3(b) states development proposals (for major, national or those that require EIA) will only be supported where it can be demonstrated the proposal will conserve, restore and enhance biodiversity to ensure it is left in a demonstrably better state than without intervention.

We note in paragraph 5.4.1that any future EIAR will "adhere to NPF4 to conserve, restore, and enhance biodiversity". We recommend an outline biodiversity enhancement plan associated with the Proposed Development is provided in the Environmental Impact Assessment Report (EIAR), with an indicative site/indicative proposals for a HMP area. RSPB Scotland recommends that access to appropriate land for this activity is secured as early in the application process as possible. We recommend the Applicant provides sufficient information on proposals for enhancement to assure the Consenting Authority that the proposed development has satisfied the requirements under NPF4.

We hope our response will be useful for the applicant in preparing any EIA Report; please do not hesitate to contact me should further discussion regarding our response be needed.

Yours sincerely,

Signature redacted

Julia Gallagher – Senior Conservation Officer
Scottish Lowlands & Southern Uplands

Tuesday, 05 September 2023

Local Planner
Energy Consents Unit
5 Atlantic Quay
Glasgow
G2 8LU

Development Operations
The Bridge
Buchanan Gate Business Park
Cumbernauld Road
Stepps
Glasgow
G33 6FB

Development Operations
Freephone Number - 0800 3890379
E-Mail - DevelopmentOperations@scottishwater.co.uk
www.scottishwater.co.uk
Follow Us

Dear Customer,

**Lairdmannoch Energy Park, Ringford, DG7 2AU**
**Planning Ref: ECU00004900**
**Our Ref: DSCAS-0093086-DS2**
**Proposal: The Proposed Development will consist of nine wind turbines (up to 180m tip height), ground mounted solar panels, battery energy storage, access tracks, and associated infrastructure.**

**Please quote our reference in all future correspondence**

## Audit of Proposal

Scottish Water has no objection to this planning application; however, the applicant should be aware that this does not confirm that the proposed development can currently be serviced. Please read the following carefully as there may be further action required. Scottish Water would advise the following:

## Drinking Water Protected Areas

A review of our records indicates that the proposed activity falls within a drinking water catchment where a Scottish Water abstraction is located. Scottish Water abstractions are designated as Drinking Water Protected Areas (DWPA) under Article 7 of the Water Framework Directive. The Ringford Boreholes supply Ringford Water Treatment Works (WTW) and it is essential that water quality and water quantity in the area are protected. In the event of an incident occurring that could affect Scottish Water we should be notified immediately using the Customer Helpline number **0800 0778 778**.

The wind farm development lies with the Ringford well field groundwater risk zone. Surface water from the area where the 9 turbines are proposed all drains initially into Loch Mannoch before entering the outflow watercourse, the Tarff Water.

Provided the developer follows standard guidelines to minimise and avoid polluting local watercourses there is a low risk of the well field being adversely affected by contaminated or turbid water from the turbine zone. This is mainly because Loch Mannoch will act as a primary receptor for all surface water pollution. Turbid water will settle in the loch before entering the Tarff Water outflow which is approximately 4.5 to 5.0 km upstream from the Ringford well field.

The solar panel development area is located downstream from Loch Mannoch and most of its 2 to 2.5 km riverside boundary lies within 100 m of the Tarff Water. This represents a much greater risk to water quality in the Tarff Water and is therefore a bigger threat to the well field, particularly during the construction phase. There would be a negligible risk during the normal operational phase.

The alluvial gravel aquifer at the Ringford well field is discontinuous upstream in the Tarff Water valley and so it is not possible for contaminants to travel underground from the solar farm to the well field. However, it is thought that a proportion of the abstracted groundwater at the well field comes from the Tarff Water as it passes within 50 m of the boreholes. Therefore, there is a possibility of any prolonged contamination in the river entering the gravel aquifer and degrading production water quality from the boreholes.

It is difficult to quantify this risk from the solar panels during their construction, but it will be vital that the developer arranges an effective monitoring programme for surface water, including an early warning system of any contamination in watercourses. Input to this programme from Scottish Water will be essential.

Scottish Water have produced a list of precautions for a range of activities. This details protection measures to be taken within a DWPA, the wider drinking water catchment and if there are assets in the area. Please note that site specific risks and mitigation measures will require to be assessed and implemented. These documents and other supporting information can be found on the activities within our catchments page of our website at www.scottishwater.co.uk/slm

We welcome receipt of this notification about the proposed activity within a drinking water catchment where a Scottish Water abstraction is located.

The fact that this area is located within a drinking water catchment should be noted in future documentation. Also anyone working on site should be made aware of this during site inductions.

We would request further involvement at the more detailed design stages, to determine the most appropriate proposals and mitigation within the catchment to protect water quality and quantity.

We would also like to take the opportunity, to request that 3 months in advance of any works commencing on site, Scottish Water is notified at protectdwsources@scottishwater.co.uk. This will enable us to be aware of activities in the catchment and to determine if a site meeting would be appropriate and beneficial.

## Surface Water

For reasons of sustainability and to protect our customers from potential future sewer flooding, Scottish Water will not accept any surface water connections into our combined sewer system.

There may be limited exceptional circumstances where we would allow such a connection for brownfield sites only, however this will require significant justification from the customer taking account of various factors including legal, physical, and technical challenges.

In order to avoid costs and delays where a surface water discharge to our combined sewer system is anticipated, the developer should contact Scottish Water at the earliest opportunity with strong evidence to support the intended drainage plan prior to making a connection request. We will assess this evidence in a robust manner and provide a decision that reflects the best option from environmental and customer perspectives.

### General notes:

- Scottish Water asset plans can be obtained from our appointed asset plan providers:
    - Site Investigation Services (UK) Ltd
    - Tel: 0333 123 1223
    - Email: sw@sisplan.co.uk
    - www.sisplan.co.uk

I trust the above is acceptable however if you require any further information regarding this matter please contact me on **0800 389 0379** or via the e-mail address below or at planningconsultations@scottishwater.co.uk.

Yours sincerely,

**Ruth Kerr.**
Development Services Analyst
PlanningConsultations@scottishwater.co.uk

### Scottish Water Disclaimer:

*"It is important to note that the information on any such plan provided on Scottish Water's infrastructure, is for indicative purposes only and its accuracy cannot be relied upon. When the exact location and the nature of the infrastructure on the plan is a material requirement then you should undertake an appropriate site investigation to confirm its actual position in the ground and to determine if it is suitable for its intended purpose. By using the plan you agree that Scottish Water will not be liable for any loss, damage or costs caused by relying upon it or from carrying out any such site investigation."*

The Coal Authority
Resolving the impacts of mining

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG
T: 01623 637 119
E: planningconsultation@coal.gov.uk
www.gov.uk/coalauthority

For the attention of Steven McClernon – Senior Case Officer
Scottish Government

**[By email: steven.mcclernon2@gov.scot]**

31 August 2023

Dear Mr McClernon

**ELECTRICITY ACT 1989**
**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

Thank you for your notification of 23 August 2023 seeking the views of the Coal Authority on the above.

I have checked the site location plan against the information held by the Coal Authority and can confirm that the proposed development site is located outside of the defined coalfield.

On this basis, the Planning team at the Coal Authority have no comments to make.

Please do not hesitate to contact me if you would like to discuss this matter further.

Yours sincerely

**The Coal Authority Planning Team**

Disclaimer

The above consultation response is provided by The Coal Authority as a Statutory Consultee and is based upon the latest available data on the date of the response, and electronic consultation records held by The Coal Authority since 1 April 2013. The comments made are also based upon only the information provided to The Coal Authority by the Local Planning Authority and/or has been published on the Council's website for consultation purposes in relation to this specific planning application. The views and conclusions contained in this response may be subject to review and amendment by The Coal Authority if additional or new data/information (such as a revised Coal Mining Risk Assessment) is provided by the Local Planning Authority or the Applicant for consultation purposes.

Development Management and Strategic Road Safety
**Roads Directorate**

Buchanan House, 58 Port Dundas Road, Glasgow G4 0HF
Direct Line: 0141 272 7400
Alan.Kerr@transport.gov.scot

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

Steven McClernon
Energy Consents Unit
The Scottish Government
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Energy Consents Unit
Reference:
ECU00004900

Date: 29 August 2023

Dear Steven,

## Electricity Act 1989

## The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017

## Scoping Opinion – Proposed Section 36 Application for Lairdmannoch Energy Park – Dumfries and Galloway

### Introduction

The scoping opinion request dated 23 August 2023 for the proposed Lairdmannock Energy Park has been passed to Jacobs for review in their role as Development Management Advisor and Auditor to Transport Scotland.

This consultation response is focused on matters related to the trunk road network and is primarily informed by the information provided in the Environmental Impact Assessment (EIA) Scoping Report, dated August 2023.

### Development Proposals

The proposed development is located 10 km to the west of Castle Douglas and comprises 9 wind turbines with a maximum height to blade tip of 180 m, ground mounted photovoltaic (PV) solar panels with a maximum height of 3.2 m above ground level, up to 20 MW of battery storage units anticipated to be located adjacent to the substation, and associated infrastructure.

OBSERVATION 1: It is acknowledged that development construction is anticipated to occur over a 12-month period. The site is intended to be operational for 40 years, “after which the turbines and solar panels and associated infrastructure will be decommissioned, and the site restored unless further permission is obtained allowing further operation or repowering”.

### Construction Traffic Routes

The EIA Scoping Report confirms that initial review indicates that “the most viable route for delivering components…is likely to be via the A75 and onto the A713 at Castle Douglas. From here components will travel along the B795”. It is advised that assessment of the final route has not been undertaken at this stage but that it “will either take the A762 and access site directly from the east or continue along the B795 to the existing forestry tracks and access the site from

the North. Alternative routes will be considered as the project develops and further baseline conditions and assessments are undertaken".

OBSERVATION 2: It is acknowledged that the proposed route options from the A75 trunk road (T) at that A75(T) / A713 at-grade priority-controlled junction are illustrated in Figure 12 of the Scoping Report. Note, any abnormal loads assessment should consider the whole route from where it enters the road network, e.g., the port of entry.

OBSERVATION 3: It is acknowledged that the site access is provided from the local road network. Access proposals / mitigation requirements on the local road network are regarded as matters for consideration by the local authority.

## Baseline Traffic Data and Traffic Growth

The Scoping Report confirms that "baseline traffic flow information would be obtained from existing datasets augmented by new surveys as appropriate".

OBSERVATION 4: Transport Scotland are primarily concerned with trunk road network impacts. The suitability of information informing the assessment of effects on the local road network is regarded as a matter for consideration by the local authority.

OBSERVATION 5: Existing trunk road traffic data informing the traffic and transport assessment must be requested via traffic.data@mobiie.co.uk.

Transport Scotland would highlight that Department for Transport (DfT) traffic count data is not an appropriate source of information for the assessment of trunk road traffic impacts. As stated in the DfT website data disclaimer, "traffic estimates for individual road links and small areas are less robust, as they are not always based on up-to-date counts made at these locations. Where other more up-to-date sources of traffic data are available (e.g. from local highways authorities), this may provide a more accurate estimate of traffic at these locations. It is the responsibility of the user to decide which data are most appropriate for their purpose, and if DfT road link level traffic estimates are used, to make a note of the limitations in any published material".

Where no trunk road traffic data is available and traffic surveys are proposed, the scope of the traffic surveys must be agreed with Transport Scotland.

OBSERVATION 6: The baseline traffic data utilised must be representative of typical conditions. It is acknowledged that traffic volumes on the trunk road network in some locations may not have returned to pre-COVID-19 levels. Where this is the case, the data proposed to be utilised must be sense-checked against recent pre-COVID-19 data. It would be beneficial to confirm with Transport Scotland whether the data proposed to be utilised is appropriate in advance of the preparation of the transport and access assessment.

OBSERVATION 7: The Scoping Report does not appear to confirm the anticipated opening year of the proposed development. This must be confirmed in the EIA and an appropriate growth factor applied, e.g., National Road Traffic Forecast (NRTF) growth factor.

## Assessment of Effects

Section 5.7.4 of the Scoping Report sets out the proposed impact assessment methodology and confirms that "effects would be identified and quantified in terms of significance and mitigation measures identified where necessary as part of the assessment process. Discussion of the detailed scope of the assessment would be discussed with Dumfries and Galloway Council at the outset to agree the study area, sensitive receptors and baseline datasets".

OBSERVATION 8: Should additional transport and access related scoping information be prepared in advance of the preparation of the EIA transport and access chapter, this should also be issued to Transport Scotland for review.

OBSERVATION 9: It is noted that the Scoping Report does not confirm anticipated assessment assumptions, e.g., the volume / percentage of construction material required to be transported to the development site, or assessment elements proposed to be scoped out. Full details of these must be provided in the EIA, supported by appropriate justification. Regarding the volume of material required to be transported to site, Transport Scotland would advise that a worst-case scenario must be assessed. Should the volume required to be transported to site exceed that assessed, where this would alter assessment conclusions, the assessment must be updated and outcomes issued for consideration and approval by the local authority, in consultation with Transport Scotland.

OBSERVATION 10: It is noted that the Scoping Report does not specifically confirm the proposed transport and access assessment study area. Study area road links must be clearly defined in the EIA transport and access chapter, with the points beyond which the effects of development traffic would likely be diluted clearly specified. A plan should be provided to clearly illustrate the study area extents. As noted in OBSERVATION 2, any abnormal loads assessment should consider the whole route from where it enters the road network, e.g., the port of entry.

OBSERVATION 11: The Scoping Report does not discuss sensitive receptors. These should be appropriately considered in the assessment of effects where required.

## Trip Generation, Distribution and Construction Traffic Impacts

It is acknowledged that the EIA will detail the potential number of daily, weekly, and total delivery numbers for the proposed development, providing confirmation of:

- Estimated construction employee trips.
- The number, size, and weight of construction deliveries.
- The anticipated schedule for deliveries.

The Scoping Report advises that this information will be considered alongside estimated construction traffic distribution and assignment “to assess the percentage impact of generated development trips on the existing road network”.

OBSERVATION 12: Anticipated operating hours and any associated restrictions must be confirmed in the EIA.

OBSERVATION 13: Transport Scotland would advise that the anticipated schedule for deliveries should set out construction traffic volumes per month throughout the construction period.

It is confirmed that “where the percentage impacts exceed the IEMA Guidelines thresholds for detailed assessment, a full assessment of environmental effects would be undertaken. This would include an assessment of severance, accidents and safety, wear and tear, driver delay, pedestrian amenity, dust and dirt etc”.

It is further advised that “a matrix approach would be used (combining the magnitude of effect and receptor sensitivity) to identify the significance of the effect”.

OBSERVATGION 14: It is noted that the Scoping Report does not confirm whether operational stage trip generation, distribution and traffic impacts will be assessed. It is acknowledged that operational stage traffic associated with the proposed development is likely to be limited.

However, where it is intended to scope this out of the assessment this should be confirmed, and appropriate justification provided.

OBSERVATION 15: It is acknowledged that the assessment of effects will be undertaken in line with IEMA Guidelines. This is acceptable to Transport Scotland.

## Assessment of Accidents

OBSERVATION 16: The Scoping Report does not confirm whether an assessment of historic accidents within the study area will be undertaken as part of the EIA transport and access chapter. Transport Scotland would highlight that this is required and should include trunk road links within the assessment study area, including the A75(T) / A713 junction. The assessment should identify any accident clusters and provide full details of any mitigation requirements. Further, it should be noted that 'CrashMap' is not an appropriate source of information for the assessment of trunk road network accidents, as it may not include the latest available data for the road links assessed. Trunk road accident data must be requested from accidentdatarequests@transport.gov.scot. Also, the accident assessment study area must be clearly defined, supported by a plan illustrating the road links assessed and the severity of the accidents identified.

## Cumulative Impacts

OBSERVATION 17: Confirmation should be sought from the local authority regarding other wind farm developments that may need to be considered. An appropriate cumulative impact assessment should then be undertaken if required. Full details of cumulative impacts should be set out, including a programme indicating the worst-case combined trip generation and associated percentage impact relative to baseline traffic levels, both in terms of total traffic and the percentage increase in HGVs. Should impacts exceed assessment thresholds, full assessment of effects should be undertaken.

## Mitigation Measures and Residual Impacts

It is acknowledged that "where effects are identified as being significant (in accordance with the EIA regulations), mitigation will be proposed, and a re-assessment of the effects undertaken".

OBSERVATION 18: Full details of any required / proposed mitigation measures should be provided in the EIA Transport and Access chapter.

OBSERVATION 19: Transport Scotland would advise that the preparation of a Construction Traffic Management Plan (CTMP) would be appropriate in this instance as a best practice measure, regardless of the outcomes of the assessment of effects undertaken. It is advised that it would be beneficial to provide and Outline CTMP as part of the EIA, which sets out the proposed content of the CTMP.

OBSERVATION 20: The traffic and transport assessment should assess residual impacts associated with the proposed development.

## Abnormal Loads

OBSERVATION 21: It is acknowledged that the Scoping Report refers to pre-application comments from Dumfries and Galloway Council concerning abnormal loads assessment requirements. However, no information is provided regarding the consideration of abnormal loads in the assessment. An Abnormal Loads Assessment (ALA) is required to be prepared and submitted alongside the EIA Transport and Access chapter to enable Transport Scotland to respond to any forthcoming application.

OBSERVATION 22: The following aspects should be confirmed in the ALA:

- Port of entry for shipping of wind turbine components.
- The number and dimensions of abnormal loads and transporting vehicle, i.e., weight limits, length etc.
- All trunk roads to be used by abnormal load vehicles.
- A route review should be undertaken considering the horizontal and vertical alignment of the preferred route(s), defining locations where a detailed swept path assessment is required.
- Swept paths analysis are required for turbine blades and turbine tower sections, and associated drawings must be provided.
- Key organisations to be consulted along the proposed routes should be identified.
- Initial consideration of: The maximum axle loading on structures in consultation with the relevant roads agencies; clear heights in consultation with utility providers and transport agencies; roadworks or closures that could affect the passage of the loads; underground services on the proposed route; satisfaction of Police Scotland and local authority to the proposed route(s); lay-by areas that can be utilised for temporary parking; and lay-bys that can be used to let traffic pass slow moving abnormal loads.
- Any other obstructions that may restrict transportation of abnormal loads.
- Details of measures to mitigate the impacts of abnormal load movements.
- Drawings providing details of proposed mitigation measures.
- Geometry and visibility at access point(s) to / from trunk road.
- Abnormal Loads Management Plan introducing measures that could help reduce the impact of abnormal load convoys.

The ALA must consider the full extent of the proposed abnormal loads route between the port of entry and the proposed development.

We trust this is satisfactory but should you have any queries please do not hesitate to contact me.

Yours sincerely,

Redacted

Alan Kerr

Alan.Kerr@transport.gov.scot

**Transport Scotland**

**Roads Directorate**

cc Owen O'Reilly, Jacobs

| | |
|---|---|
| **From:** | Sanchez Jose (UK) |
| **To:** | Steven McClernon |
| **Subject:** | RE: Request for Scoping Opinion Lairdmannoch Energy Park |
| **Date:** | 24 August 2023 10:08:32 |
| **Attachments:** | image001.png<br>image002.png |

Thanks Steven,

We do not currently have microwave links in that area

Kind regards

Jose

**From:** Steven.McClernon2@gov.scot <Steven.McClernon2@gov.scot>
**Sent:** Thursday, August 24, 2023 9:54 AM
**To:** Sanchez Jose (UK) <Jose.Sanchez@virginmediao2.co.uk>
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park

Good morning Jose,

The information you require can be found in the attached document and pages 4-8 of the scoping report.

Thanks.

Kind regards,

Steven McClernon
Senior Case Officer
Onshore Electricity, Strategy and Consents
Directorate for Energy and Climate Change | Scottish Government | 5 Atlantic Quay, 150 Broomielaw, Glasgow G2 8LU
e: steven.mcclernon2@gov.scot | m: 07342 068004

To view the Energy Consents team's current casework please visit www.energyconsents.scot.
To read the Energy Consents team's privacy notice on how personal information is used, please visit http://www.energyconsents.scot/Documentation.aspx

Scottish Government
Riaghaltas na h-Alba
gov.scot

**From:** Sanchez Jose (UK) <Jose.Sanchez@virginmediao2.co.uk>
**Sent:** Thursday, August 24, 2023 9:44 AM
**To:** Steven McClernon <Steven.McClernon2@gov.scot>; Econsents Admin <Econsents_Admin@gov.scot>; Lauren.kellaway@atmosconsulting.com
**Subject:** RE: Request for Scoping Opinion Lairdmannoch Energy Park

Hi Steven,

We are only interested in the location (coordinates) of the turbines as well as their dimensions. Could you please let us know in which document can we find that information?

Kind regards

Jose Sanchez
Tx Design - Access Delivery
jose.sanchez@virginmediao2.co.uk
m redacted


---

**From:** Steven.McClernon2@gov.scot <Steven.McClernon2@gov.scot>
**Sent:** Wednesday, August 23, 2023 2:12 PM
**To:** Econsents_Admin@gov.scot; Lauren.kellaway@atmosconsulting.com
**Subject:** Request for Scoping Opinion Lairdmannoch Energy Park

Dear Consultee,

**ELECTRICITY ACT 1989**
**THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS 2017**

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR LAIRDMANNOCH ENERGY PARK.**

On 15th of August 2023, Atmos Consulting on behalf Wind 2 Project 4 Limited (the Applicant), submitted a request for a scoping opinion from the Scottish Ministers for the proposed section 36 application for Lairdmannoch Energy Park. The proposed development is for 9 wind turbines 180 m, blade to tip height, located 7 km north east of Gatehouse of Fleet and 10 km west of Castle Douglas in the planning authority area of Dumfries and Galloway in line with regulation 12 of The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017.

Under regulation 12, Scottish Ministers are required to provide a scoping opinion outlining the information they consider should be included in the EIA report. Ministers are also required to consult the relevant consultation bodies and any other interested party which is likely to have an interest in the proposed development by reason of its specific environmental responsibilities or local and regional competencies.

The scoping report and supporting information can be viewed at the Scottish Government's Energy Consents Unit website www.energyconsents.scot by:

- clicking on ***Search*** tab; then,
- clicking on ***Simple Search*** tab; then,
- typing **Lairdmannoch Energy Park** into ***Search by Project Name*** box then clicking on ***Go***;
- then clicking on **EC00004900** and then click on ***Documents*** tab.

The indicative wind turbine OS grid co-ordinates, rotor diameter and hub height details can be found at **Table 1**, **pages 5 and 6** of the Scoping Report.

**To allow Scottish Ministers to provide a comprehensive scoping opinion, we ask that you review the scoping report and advise on the scope of the environmental impact assessment for this proposal. Please advise if there are any further matters you would like Ministers to highlight for consideration and inclusion in the assessment, particularly site-specific information.**

I would be grateful for your comments by **13th September 2023.** Please note that reminders will not be issued, therefore if we have not received any comments from you, nor a request for an extension to this date, we will assume that you have no comments to make.

Please send your response (in PDF format if possible) to steven.mcclernon2@gov.scot

Kind regards,

Steven McClernon
Senior Case Officer
Onshore Electricity, Strategy and Consents
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To view the Energy Consents team's current casework please visit www.energyconsents.scot.
To read the Energy Consents team's privacy notice on how personal information is used, please visit http://www.energyconsents.scot/Documentation.aspx

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| | |
|---|---|
| **From:** | Michael Duffy, Vodafone |
| **To:** | Steven McClernon; OFCOM Applications, Vodafone Group |
| **Subject:** | Scoping Opinion Lairdmannoch Energy Park EC00004900 |
| **Date:** | 12 September 2023 14:44:26 |
| **Attachments:** | image001.png |

Hi Steven

After plotting the co-ordinates for the nine proposed wind turbines I can confirm that we have no links in the area that will be impacted by the development

Regards

Mike


**Michael Duffy**

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**Upcoming leave 14th September to 25th September**
**5th and 6th October**

C2 General

| | |
|---|---|
| **From:** | campaigning@woodlandtrust.org.uk |
| **To:** | Steven McClernon |
| **Cc:** | campaigning@woodlandtrust.org.uk |
| **Subject:** | Woodland Trust response to Request for Scoping Opinion Lairdmannoch Energy Park |
| **Date:** | 13 September 2023 15:53:22 |
| **Attachments:** | image001.png<br>image002.png<br>image003.png<br>image004.png<br>image005.png |

Dear Steven,

Thank you for consulting the Woodland Trust on the proposed scoping opinion for Lairdmannoch Energy Park.

We would recommend that the applicants seek to undertake an Arboricultural Impact Assessment to ensure that any important trees (including any ancient or veteran trees) are identified and accounted for as part of the scheme ahead of the full planning application.

We hope this is of help.

Kind regards,
Nicole Moses


## Nicole Moses

Campaigner - Woods Under Threat
Telephone: 03437705438
Email: NicoleMoses@woodlandtrust.org.uk

The Woodland Trust, Kempton Way, Grantham, Lincolnshire, NG31 6LL
0330 333 3300
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A non-profit making company limited by guarantee.

Registered in England No. 1982873.

Registered Office: Kempton Way, Grantham, Lincolnshire, NG31 6LL.

http://www.woodlandtrust.org.uk

| | |
|---|---|
| **From:** | Des Hadnett |
| **To:** | Steven McClernon |
| **Cc:** | Econsents Admin; Lauren.kellaway@atmosconsulting.com |
| **Subject:** | Re: Request for Scoping Opinion Lairdmannoch Energy Park |
| **Date:** | 12 September 2023 20:27:18 |
| **Attachments:** | Lairdmannoch.docx<br>ATT00001.htm |

Dear Steven,

Having not received a reply from my e-mail requesting an extension, I am now attempting to work to your original deadline. Geoff Monk our specialist spokesperson on this subject has produced comments on Lairdmannoch Energy Park; they are as follows:

# Lairdmannoch:

In response to the Lairdmannoch energy park proposal, I have 6 bullet points. In what follows I have expanded these nto a number of key questions (some of which are addressed by the proposed developers). Many of the questions/issues are generic to any renewables development, and all in all are asked to diligently seek out whether as affected communities we should be wholeheartedly supporting the project, showing some reticence or rejecting the proposal.
Secondly, members of the local community correctly have a number of questions/concerns regarding any major project, and as the first public meeting following the proposal was at Ringford (Ringford/Tongland community council,, I answer the concerns raised (or at least those I could remember).

1. Rationale for renewables: climate change and biodiversity.
In summary, climate change is accelerating, as gases, particularly carbon dioxide are added to atmosphere through burning (mainly fossil fuels). 'Tipping points' or accelerations in impact due to the earth increasingly out of the balance are occurring (eg as air warms, it is capable of holding additional moisture (as water vapour), which itself is a greenhouse gas, and decreasing global ice cover (high albedo) decreases the efficiency of the the earth to reflect suns energy back into space).

Extraordinary consistency in worldwide independent research into Climate Change since early 1990's using mathematical modeling has clearly forecast what is now happening - many previous temperature/rainfall records broken, sometimes by massive margins. The work overwhelmingly mathematical, thus almost completely independent of judgment or leaning of research scientists involved.

Human response is to (as fast as possible) reduce to negligible our reliance on fossil fuels; using renewables.

Post millennium, wind, solar, hydro, wave and tidal were all in the mix as possible future energy sources. Wave and tidal, despite massive worldwide investment have not as yet delivered. The corrosive impact of the oceans is proving a 'hard nut to crack'. Traditional nuclear is an alternative, unpopular with some, and nuclear fusion, like wave and tidal is making progressing, but slowly. Thus, solar and wind makes up nearly all the present renewable energy, and as battery storage gains momentum some energy can be saved for when the wind doesn’t blow and the sun doesn’t shine.

'Business as usual' is a climate change scenario presently being followed. Our move toward renewables has as yet made little impact. The impact on all life on earth (including the oceans) will be catastrophic unless humanity massively and rapidly cuts greenhouse gas emissions. Separately, although related, climate change and the way we use our land is impacting so as to make extinct an increasing number of animal and plant species. Additionally, some fauna and flora and thriving in the wrong places, impacting further on indigenous species.

Only humanity can act so as rebalance the earth system - other animal and plants cannot do it. Thus, for the sake of all life on earth (most easily related to by perhaps selfishly thinking of our children and grandchildren), we have to act radically, hence 'Climate emergency' - and all that phase must mean for each of us.

If we stand back and take a view from current climate projections, impact on the earth system will look something like the following:

An optimistic view (around 20% likely): Many more species will die out, advance of 'foreign' species will accelerate this. Food sources will become scarce or unviable in some areas (where life becomes extinct). In terms of humanity, stress will result in crucial institutions failing or partially failing. Health services, electricity supplies (thus water), food supply (particularly for island nations unable to nearly feed themselves) will be very problematic.

At around 50% (most likely scenario): Impact catastrophic, mass migration of humans; starvation many species. Considerable parts of the earth become life extinct.

Taking a pessimistic view (around 20% likely): apocalyptic, few fauna and flora, including human communities, survive.

These projections ignore consequences of human societal breakdown: war/civil war, or the continued loss of land long term as sea level imperceptibly rises year on year.

2. The Lairdmannoch project.
Interestingly, not just a wind farm, but perhaps using latest technology, combining wind and solar and holding energy through batteries. This on paper makes this project worth looking at in detail.

As such, we need to gain understanding, including personal contact with key staff in the Company, the profile and outlook of the Company: are they a 'bottom line' only company, or is there a strong ethical dimension? Presently I am disappointed that after a positive initial letter, I had no response to an email I wrote to them and a member of Ringford/Tongland CC noted the CE(?) was director of up to 150 companies - how can that be in terms of personal responsibility? It is also troubling that no ‘laymans’ summary of the scoping document has been sent out – even if that were an over glowing, this is what we are going to achieve! The time period for observations on the document is also far too short.

Other questions:
Why has Lairdmannoch been chosen, what is the outlook of the land owner(s)?
What is the Company’s willingness to work with the local community?
Why do they feel solar is part of their energy park - in an area of low direct sunshine?
What will be the cost benefit considering the anticipated loss of grazing land (or will solar arrays be raised sufficiently above ground to allow grazing (the grass will still grow) below?
Although small power generation wise, why is the considerable drop in height of the Tarff on exit from Loch Mannoch not being considered as a source of (small scale) hydro?
At relative low elevation (200m above sea level), what is the anticipated loss in wind power generation due to the turbines being sited lower in the boundary/friction layer? Is there any possibility of liaising with forestry to site wind turbines on higher ground south of Loch Whinyeon?
Some wind farms are later extended - what thoughts do the company have on future extension?
How large are the batteries (storage wise and size); what will they look like from roads and hills tops?
Considering benefits to local communities as climate change kicks in increasingly; if the worst comes to the worst and national power supply struggles, what strategies will be in place to ensure that a low voltage feed is available to nearby communities (need to have local people with some understanding/skill in the system)?

3. Site land use; consequences of construction and operation.
The turbines are to be on very wild land, few trees (presumably due to grazing by deer and perhaps less so by sheep (I see little evidence of heavy farm grazing). One small plantation forest.
How might the land be made more resourceful?

Might trees be planted (appropriate animal grazing mitigation) between turbines. . .?
How will land be tested for possible chemical degradation (on entry and exit to Loch Mannoch)?
What might those contaminants be; will they be solely in the construction process?
What long term contaminants may be present?
What knowledge will the community have of any contamination (as yet I haven't swam in Loch Mannoch!)?
Will there be any negative impact on soil structure under solar arrays?
Similarly what are the possible (even if unlikely) soil quality impacts near the batteries - as they age?
What is the likely life of the batteries (my Prius batteries are still about 60% after 200,000 miles over 14 years)? (optimistic, realistic and pessimistic values approriate here).
What is the full carbon footprint of the project from sourcing/mining substances to transporting and constructing the energy park?
What will the ongoing carbon footprint be (how often will technicians need to access the site and what will their carbon footprint be: will they be local)?
Answers to these questions will need to include indicators on earth footprint for any extension.

4. Project construction.
Any project involving considerable movement of materials will have an impact on surrounding communities. Thinking about this, rather than use the term 'carbon footprint', it is perhaps more appropriate to consider the total 'earth footprint' so as to include for example appropriate minimal use of quarried materials and transport.

Questions involve anticipated tonnage/lorry loads of materials through the area and over what time period; how they will impact narrow, very bendy roads (eg. north of Barstobrick and west of Laurieston)?
Also note considerable cycling walking in the vicinity and plethora of children in Laurieston - how will vulnerable road users be considered?
Are there any alternative routes, possibly passing through forestry land that could be used rather than via Barstobrick or Laurieston? (eg. From road 1 mile SE of Gatehouse northeast up long incline and then probable partial new road to cut (more gently) downhill before approaching NW corner of site from south???)
In terms of using stone, where will this be quarried, and how local will this be?
Even if there is a negative cost impact, will more expensive materials (longer lasting/more benign substances?) be used, because cost benefit wise, this will actually reduce the earth footprint long term?
What will the time period of construction be; what day to day knowledge of what journeys are being carried out will be passed to the community (in straightforward ‘layman's language')?
These questions also appropriate to a future extension.
Finally, will there be an absolute guarantee that public routes used (including core paths) be left in pristine condition at completion (the fact that road surfaces at present contain pot holes must not preclude this)?

5. Ambiance
Following construction, what benefits might there be to the community in terms of land access?
Will access routes become paths and cycle routes? Will there be off road, but adjacent to A762 access for pedestrians (as at present from A762 400 yards north of and through Kirkconnel (and on to the Martyr's Monument)?
Will there be comprehensive signage (and possibly even a small visitor centre off the A762) describing the scheme?
Might the path (shown on ordnance survey maps) on the west of Loch Mannoch be reinstated – as it has all but vanished - so as to link north to the forestry tracks as well as east to Upper Lairdmannoch?

6. Longer term impact.
Should the site be closed at any time in the future, what steps will be taken to ensure deconstruction/decommissioning (as written in 4 above)?
Will sufficient funds be set aside to allow this - even if the company goes into administration (and how can that money be ring-fenced)?

Questions raised by Chair, members of Ringford/Tongland community council and public attendees. Some of these have already been alluded to in the bullet points above:

1. Concern over land, ground water impact of the development.

Ensure there is expansive chemical monitoring, primarily at northern water entry and exit (Tarff) into and out of Loch Mannoch. Monitor changes with time, during construction and through project life. Separately monitor ground near battery storage (sands ensure not built in an area that will not flood).

2. Concern on loss of trees on current site:

There are very few trees, save a small plantation on the upper site, and lower down, mostly grazing land. In dry weather, a run (or walk) through the site and along Loch Mannoch is really lovely because of its open views to the east).

3. Concern on loss of trees in general on wind farm sites:

I struggled to understand this viewpoint; as apart from possible tree loss through new access roads to sites, the development of wind farms themselves should be fairly neutral. Indeed near sires near Cairnsmore of Cairsphairn, much new forestry has been planted.

4. Impact on food chain

Providing the site is built to high specification, there should be no leakage of materials, albeit due to weathering, there are question marks about chemical run-off onto the ground from turbine blades.

5. Recycling/removal of materials at the end of their life

Again, developers need to be held to account to ensure all substances are treated appropriately and removed without any ground or water contamination.

6. Bird and insect strikes.

As in aviation (at airports), bird strikes unfortunately do occur. Clearly, there will be a small percentage loss of some insects and birds (although turbulence theory suggests most tiny insects should simply be ‘catapulted’ away from a blade in the air currents). It will always be of concern that some ‘special’ birds (kites, osprey and eagles) could be hit.

But, increasingly due to climate change, the loss of animal and bird life, perhaps whole species will far outweigh the loss through bird strikes. Though qualitative, I would strongly reinforce this comment now, far more than I would have done before coronavirus. As we have continued to follow the ‘business as usual’ path, we are now forced to look at ‘the greater good’ the balance of simply not responding to climate change against the hoped for relatively small negative impact of our drive to mitigate against climate change..

7. MOD Interest

I do not know the current status, but prior to coronavirus the MOD habitually objected to wind farm development. However, as I understand it away from MOD establishments (and perhaps particular low flying areas), this is later waived providing the normal ‘red lights’ are displayed on objects projecting into the air.

8. Implication that climate change is relatively inconsequential.

We have to keep strictly to the science: Weather observations, and going back to the Middle Ages, surrogate observations provided by tree ring growth and 'phenology' (the science behind annual dates that shrubs flower, seed etc (we have some written records going back to around 13th century)) indicate regional periods of colder or slightly warmer conditions, but it is figures worldwide that demonstrate 'with almost certainty' that the world is increasingly warming, more or less since the 1980's due to human impact. This ties in almost precisely with the increasing level of fossil fuel burning. Going back to the 1970's Exxon, the American petrochemical company through its researchers, knew what the impact of increased carbon dioxide release would be: those researchers vainly anticipated the Company would adapt! Some natural events do impact the climate, for example slightly colder years followed the eruption of Mount Pinitubo in the early 1990's. But this rapid (compared to climate swings in the past 'in geological time') change links almost perfectly with emissions due to burning fossil fuel. Weatherwise, there aren't just occasional record breaking events, but sometimes on a weekly basis a plethora of record breaking events across the globe (eg early September 2023). Hopefully, the weight of evidence will not dull what should be our reactions!

9. Concern that at present (and for several years to come) there is likely to be excess renewable power in Scotland that cannot be transferred elsewhere - thus why another wind farm?

This project is described as an energy park; the difference from it being simply a wind or solar farm is the proposed use of battery technology - the ability to store power until it is most usable, in other words when the wind speed drops previously generated power can be fed into the National Grid. On a broader scale, there are now several interconnectors, taking electricity across Europe and Ireland to where it is needed most. As more interconnections are put in place, flexibility in using electricity where needed will be markedly increased. Secondly, particularly in Scotland where there are presently transmission 'bottlenecks', we should be maximising our transition toward electric vehicles and electric heating. I have no figures to back this up, but I suggest domestically, where there is pressure to both insulate property and move toward electric heating, in Scotland the emphasis should be on the conversion to electric energy first (as that is available). Of course, for many particularly rural properties both will be carried out together at building renovation, often after selling to a new owner.

10. Why is marine generation of electricity not taking place?

Considerable work has been done around the Orkney's in particular, but harnessing wave and tidal power is proving very difficult, and presently not viable at scale.

11. Concern that for some wind turbines emit 'ultrasound'.

As some people struggle with optical effects on screens or strobes, so there seems to be evidence that some people have hearing outside the normal range. This is outside my knowledge, but can only believe that somewhere in academia (at least), this effect is being researched (albeit that doesn't presently help those affected).

Apologies for any questions that were posed but I have forgotten - I didn't take notes on the night!

I've written all this quickly, and I've just spotted a few typos - there will be more, please live with them. However, my answers are from my own knowledge (I've said so when I don't know) as an atmospheric scientist. I have been actively forecasting and researching weather since graduating in Meteorology in 1973. Through active participation in the Royal Meteorological Society and its meetings and Journals, I have tried to keep abreast of climate science, and more recently trying to catch up in seeing our 'predicament' in terms of the progressive loss of biodiversity. I'm happy to take further concerns; what is important is that as lay people our community becomes 'up to speed' with the key issues, so that we can reject, accept with some caveats or welcome with open arms this (or any subsequent project) in our area.

8th September 2023

Geoff Monk
The Weather Centre,
Hilbre Cottage,
Laurieston,
DG7 2PW

Geoff

# Crossmichael & District Community Council

# Public Health Risks of Traffic Noise

# Crossmichael & District Community Council

# Public Health Risks of Traffic Noise

# Preliminary Results of a Noise Impact Survey

# April 2022

# Introduction. What Price Our Health?

As the volume of traffic on our roads continues to increase, rural communities have become familiar with the negative effects on their lives. There are often particularly strong feelings about heavy vehicles – HGVs, delivery vans, agricultural vehicles. The A713, which runs through the middle of Crossmichael, carries a lot of such traffic, and the residents of and close to Main Street, and to a slightly lesser extent, Townhead of Greenlaw, often raise this issue. Timber lorries – the village lies on a Strategic Timber Route – are seen as a particular problem. As things stand, such traffic is likely to continue increasing due to the Government push to expand afforestation and the probability of more wind farm and other infrastructural construction traffic using the A713.

Crossmichael & District Community Council has been campaigning on this issue for some years. Road safety aspects have long been an obvious focus, exacerbated by frequent cases of speeding. More recently research has revealed the serious effects on health of small particle atmospheric pollution, much of it associated with diesel exhaust fumes. A further aspect has, however, received much less attention. This is the effects of noise pollution on the health of those who live close by. Following up anecdotal reports, the Community Council decided to carry out a survey of residents. There were 53 responses, this high return indicating the strength of feeling on the issue.

The survey was designed by two professional psychologists, skilled in the appropriate methodology and familiar with the relevant research. This report contains the findings and the conclusions they draw. It makes stark reading. Residents are clear that heavy vehicle noise is affecting their physical and mental health, and medical research referenced in the report backs up their view (see Appendix 1 for an overview). Because the traffic continues throughout much of the night, sleep disturbance is endemic. Damage to road surfaces, to which these vehicles probably contribute disproportionately, only exacerbates the noise. The survey did not cover possible effects on children; one can imagine the effects of, for instance, sleep disturbance, on developing young brains and this is surely an area calling for further research (on this, see Appendix 2). Overall, it is clear that **the pattern of vehicle noise constitutes a clinically significant risk to public health**.

We understand the argument that the industries served by these vehicles create vital economic benefits (although how much of the benefit stays within our area is another question). But this should not give them a free pass. At the moment, their profitability depends on externalizing many of their costs, that is, transferring them on to ordinary citizens and public bodies (Council; NHS).

What do we want to see done?

Immediately: we invite all interested parties – Councillors, MSPs, public health and education leaders, police, other community councils, relevant business representatives – to join us in an urgent programme of discussion with a view to initiating necessary action. Action such as:

In the short term, a lower **speed limit** (20 mph) with effective enforcement would help; noise goes down as speed reduces. Beyond that, we need an appropriate **management framework**, agreed by all interested parties, here and across the wider area (no doubt the same problems affect other communities situated along the A713, not to mention similar routes). Given the prominence that residents give to the issue of round-the-clock working, a central element of such a framework should be an **overnight curfew**.

For the somewhat longer term, thought should be given to the possibility of moving as much heavy traffic as possible off unsuitable roads. Where feasible, for example, timber should be moved on **dedicated roads**, direct onto arterial routes such as the A75 – or even better, on to a revived railway network. Where this is not viable, businesses should contribute a fair proportion of road maintenance costs.

A more determined push to **electrify** heavy vehicles would reduce noise (not to mention atmospheric pollution) significantly.

Ultimately, we as a society should surely be considering if an economic model – whether we are thinking of farming, timber extraction, construction or general goods delivery – that depends on a market-led free-for-all is sustainable or in the best interests of a healthy society.

Richard Middleton

Chair, Crossmichael & District Community Council

**Project Summary**

A total of 53 respondents from the Crossmichael Community Council catchment area completed a brief questionnaire enquiring about traffic noise. The most striking finding was a high level of reported noise annoyance, sleep disturbance and perceived negative impact on health attributed to traffic noise amongst residents living on Crossmichael Main Street and along the A713 at Townhead of Greenlaw. These findings suggest that traffic noise exposure represents a clinically significant risk to public health. The operation of heavy commercial and agricultural vehicles, particularly in the early hours of the morning was identified as a significant factor giving rise to potential negative health outcomes. Recognition of traffic related noise pollution as a significant public health risk creates an impetus to find ways to address this issue locally, but the Crossmichael survey results are likely to have wider national implications that requires further attention.

**Introduction**

The World Health Organization (WHO) recognises noise pollution as a harmful phenomenon and one that has a deleterious impact on public health outcomes. The empirical evidence links it to hypertension, ischemic heart disease, type 2 diabetes, and a variety of psychological and mental health problems. For example, sleep disturbance is a well-recognised and important sequela of noise pollution and night-time noise has been reliably linked to major sleep problems including alterations of sleep stages together with associated fatigue, mood disorder and impairment in social and occupational functioning.

Noise pollution is typically defined as an undesirable sound that is emitted from any source and transportation is perhaps the most pervasive source of noise pollution, particularly in modern urban environments and has been consistently associated with adverse health outcomes(ref). Noise pollution is becoming increasingly salient in rural communities as intensive farming, forestry, and other developments demand greater levels of road haulage to meet commercial needs, often involving the movement of heavy vehicles through hamlets and villages at unsocial hours.

Crossmichael Community Council was made aware of significant disturbance caused by traffic noise and in recent years, the primary complaint has centred on heavy vehicles hauling logs through Crossmichael village, increasingly at unsocial hours and according to some eye-witness reports, at excessive speed. Some residents complained that sleep was being disturbed at night and in the early hours of the morning and others complained of a pervasive sense of annoyance and frustration about the impact of noise pollution on the quality of their lives. The Community Council has been pursuing the matter with key stakeholders to explore possible solutions to help ameliorate these issues. As part of this ongoing process, the Community Council decided to conduct a small-scale survey to obtain feedback from the local community about the nature and scale of the problem.

**The Survey**

A short questionnaire was designed to gather information from residents about levels of traffic noise annoyance caused by four sources previously identified by residents: (1) cars and other domestic vehicles (2) tractors and other farm machinery (3) commercial traffic including vans and delivery lorries and (4) forestry vehicles including wood lorries. Respondents were invited to participate in a brief study carried out on behalf of the Community Council to assess the level and scope of traffic related noise pollution in the Crossmichael area. It was explained that results would be used to assist in tacking noise related issues and all information would be treated in strict confidence and survey material would be anonymised. Respondents were asked to provide their age in years and indicate location of residence using the following categories (1) Crossmichael Main Street (2) Templands (3) St Michaels (4) Old Ferry Road & Rhone Park (5) Townhead of Greeenlaw (6) Other area to be specified. Respondents were asked to use a standard 5-point Likert scale to rate the frequency of annoyance caused by noise they could hear at home – for the analysis, the 5 point scale was collapsed to form three outcome categories (1) No Significant Annoyance (2) Neutral Response (3) Significant Annoyance Respondents were also asked to rate sleep disturbance and their perception of health problems caused by traffic noise using a standard Likert scale – here again, the 5 point scale was collapsed to form three outcome categories labelled (1) No Significant Impact (2) Neutral Response (3) Significant Impact. In addition, respondents were invited to provide any comments they wished to make (extracts from these appear in Appendix 3).

Questionnaires were made available through the village shop in Crossmichael, and an online version was posted using “Survey Monkey”.

**Results**

A total of **53** respondents completed and returned the questionnaire and 8 were returned through the online portal.

**25** (47%) were residents of **Main Street Crossmichael**,

**12** (23%) comprised residents from Templands, Old Ferry Road & Rhone Park and St Michaels combined to create a group labelled: **Off Main Street Crossmichael**

**12** (23%) residents of Townhead of Greenlaw

**4** (7%) residents on Lauriston Road towards Glenlochar

# RESULTS: Main Street Crossmichael

**Table One: Noise Annoyance by Source on Main Street Crossmichael**

| Source / Annoyance | No Significant Annoyance | Neutral | Significant Annoyance |
|---|---|---|---|
| **Car (n=25)** | 45% | 10% | 45% |
| **Tractor (n=25)** | 27% | 10% | 63% |
| **Commercial Delivery n=25)** | 23% | 10% | 68% |
| **Forestry (wood lorry) n=25** | 5% | 5% | 90% |

**Table one** shows that in overall terms, a significant proportion of resident living on Crossmichael Main Street are significantly impacted by traffic noise caused by all categories of vehicle but it is striking that wood lorries have been identified almost universally as a cause of annoyance with 90% of respondents endorsing noise emissions from this source as frequent (14%) or occurring nearly "*all the time*"(86%). Inspection of comments made by Main Street residents go beyond the statistics and paint a distressing picture of the reality. One resident said:

> "***we cannot relax in the living room to watch TV or sit comfortably, as the volume and speed of large / heavy vehicles coming through the village makes it impossible as it continues all hours of the day and night, which also causes sleep disturbance***".

On the theme of sleep disturbance, a commonly cited issue, a resident had this to say:

> "***traffic noise from wood lorries passing at speed just after 4.00am often wakes me…the vibration displaces pictures on my walls and glass in my display cabinet***".

Wood lorries were noted to have been operating "***from 03.00 to 23.00 on at least 4 days a week, giving no opportunity for a full nights sleep***" and other vehicles were involved:

"**farm feed vehicles boom like a percussion instrument when empty. Is there really any need for deliveries through the night???"**

Speed was identified as a key factor that amplified the noise generated by vehicles ("***nearly all the traffic speeds, including the majority of HGV vehicles***"), particularly in the early hours but the state of the road and in particular the presence of potholes was seen to be a major issues – one resident points out that potholes "**double the sound and annoyance**"

**Table 2: Sleep Disturbance and Health Impact Residents on Main Street Crossmichael**

| | **No significant impact** | **Neutral Response** | **Significant Impact** |
|---|---|---|---|
| **SLEEP DISTURBANCE (n=25)** | **27%** | **0%** | **73%** |
| **HEALTH IMPACT n=25)** | **38%** | **29%** | **33%** |

Table two demonstrates the high prevalence of frank sleep disturbance with 73% of respondents endorsing the presence of pervasive sleep problems caused by traffic noise. This is a highly significant result and one commensurate with diminished quality of life and an increased risk of ill-health. The fact that 33% of respondents agreed or strongly agreed with the statement "*I think I may have suffered health problems because of traffic noise*" is in keeping with the presence of widespread sleep disturbance across this sub-group.

# RESULTS: Off Main Street Crossmichael

**Table 3: Noise Annoyance by Source for OFF - Main Street Crossmichael**

| Source / Annoyance | No Significant Annoyance | Neutral Response | Significant Annoyance |
|---|---|---|---|
| **Cars n= 12** | 83% | 17% | O% |
| **Tractors n=12** | 83% | 17% | 0% |
| **Commercial Delivery n=12** | 74% | 8% | 16% |
| **Forestry (wood lorries) n=12** | 50% | 17% | 33% |

Table three summarises questionnaire results for respondents living in residential properties situated away from Crossmichael Main Street – this includes resident of Templands, St Michael and Old Ferry Road & Rhone Park together – and this offers a degree of protection and shielding from the sound of traffic passing through the village. This insulation effect is clearly reflected in the comparatively low levels of reported noise annoyance. However, 33% of this cohort still endorsed a significant degree of noise annoyance associated with "**wood lorries**" which is likely to reflect breakthrough traffic noise and proximity to the Main Street.

**Table 4: Sleep Disturbance and Health Impact for Residents OFF Main Street Crossmichael**

| | No Significant Impact | Neutral Response | Significant Impact |
|---|---|---|---|
| **SLEEP DISTURBANCE n=12** | 83% | 17% | 0% |
| **HEALTH IMPACT n=12** | 92% | 0% | 8% |

In keeping with the low levels of reported noise annoyance, the results set out in Table four confirm a commensurately low level of sleep disturbance and perceived health impact associated with traffic noise.

# RESULTS: Townhead of Greenlaw

**Table 5: Noise Annoyance by Source for Townhead of Greenlaw**

| Source / Annoyance | No Significant Annoyance | Neutral | Significant Annoyance |
|---|---|---|---|
| **Cars n=12** | **42%** | **16%** | **42%** |
| **Tractors n=12** | **50%** | **8%** | **42%** |
| **Commercial Delivery n=12** | **42%** | **16%** | **42%** |
| **Forestry (wood lorries) n=12** | **33%** | **0%** | **67%** |

The results shown in table five reflect the general trends found in Crossmichael Main Street (see Table One) – there is a significant level of noise annoyance across all traffic noise source, albeit at somewhat reduced frequencies, with wood lorries generating the greatest level of annoyance. As one resident pointed out "***the main problem comes in the form of timber lorries which always seem to come in two's or more, plus up to six on occasion***".

Several residents raised the issue of increasing volumes of traffic over the past few years: "***I truthfully do not exaggerate when I say that traffic continues 19 to 22 hours every day***".

Increased traffic volume was noted to have had a detrimental impact on the road surface with one resident noting that "***the road has more patches than a quilt, and more humps and dips that are getting worse every yea****r*".

Excessive speed clearly an issue with several residents expressing serious concerns. One resident said "**the speed at which <u>all</u> the traffic passes my house is very dangerous….especially timber lorries (that) thunder past and I fear for the foundations of my home**…" Another resident had been "**almost blown off my feet when those heavy vehicles pass**…"

**Table 6: Sleep Disturbance and Health Impact for resident of Townhead of Greenlaw**

| | No Significant Impact | Neutral Response | Significant Impact |
|---|---|---|---|
| **SLEEP DISTURBANCE n=12** | 58% | 0% | 42% |
| **HEALTH IMPACT n=12** | 50% | 8% | 42% |

# RESULTS: Lauriston Road towards Glenlochar

**Table 7: Noise Annoyance by Source for Lauriston Road towards Glenlochar**

| Source / Annoyance | No Significant Annoyance | Neutral Response | Significant Annoyance |
|---|---|---|---|
| **Cars n=4** | **100%** | | |
| **Tractors n=4** | **50%** | | **50%** |
| **Commercial Delivery n=4** | **100%** | | |
| **Forestry (wood lorries) n=4** | **100%** | | |

Table 7 essential demonstrates the comparatively low levels of traffic noise annoyance in this area which is set well back from the traffic flow along the A713. Table 8, is fully consistent with this and confirms the absence of traffic noise related sleep disturbance and perceived negative health outcomes.

**Table 8: Sleep Disturbance and Health Impact for resident on Lauriston Road towards Glenlochar**

| | No Significant Impact | Neutral Response | Significant Impact |
|---|---|---|---|
| **SLEEP DISTURBANCE n=4** | **100%** | | |
| **HEALTH IMPACT n=4** | **100%** | | |

**Main Conclusions**

1. First, a caveat. This was a small-scale, low power study that relied entirely upon the subjective report of self-selecting respondents. That said, preliminary analysis of the data revealed a high degree of internal consistency and comparison of groups with different proximity to traffic produced results in line with expected outcomes and confirmed the integrity of observed results.

2. The most striking finding of this survey was the high level of reported noise annoyance, sleep disturbance and perceived health impact attributed to traffic noise amongst residents living on Crossmichael Main Street and along the A713 at Townhead of Greenlaw.

3. Crossmichael Main Street produced the largest effects with 90% of survey respondents, all of whom lived in houses located not more than 2 to 3 metres from the traffic flow, reported significant annoyance with traffic noise generated by wood lorries together with significant levels of annoyance across all other sources including cars, tractors, and commercial vehicles. Reported annoyance was associated with commensurately high levels of reported sleep disturbance and perceived negative health outcomes. There was an attenuated effect in Townhead of Greenlaw across all study variables but nevertheless, significant levels of noise annoyance, sleep disturbance and negative health outcomes were reported.

3 The existing research literature in this specialist area clearly demonstrates a relationship between traffic and other noise exposure to annoyance – a negative and aversive psychological and emotional state – sleep disturbance encompassing frank sleep disorders and a gamut of physical and psychological health problems. It is worth noting that a common causal denominator across the range of physical and mental health outcomes associated with noise exposure is sleep disturbance which acts through multifactorial pathways**.**

**4 Bearing this in mind, the prevalence of significant sleep disturbance reported in this survey gives pause for thought and underscores what is perhaps the most important implication - the results do not indicate mere nuisance and inconvenience caused by noise pollution, they suggest that the nature, degree and reported consequences of traffic noise exposure might well constitute a clinically significant risk to public health**.

5. Given the centrality of findings associated with sleep disturbance, it is important to highlight the direct relationship between these negative health outcomes and the operation of heavy commercial and agricultural vehicles, particularly in the early hours of the morning. This was a recurrent theme in comments submitted by respondents who reported routine traffic noise disturbance at unsocial hours.

6. The survey cohort were aged between 18 and 86 years old with an average age of 58 years. The impact of traffic noise exposure and on children is clearly an issue worthy of further exploration particularly considering the salience of sleep quality for this developmentally sensitive group.

7 Excess traffic speed was an issue raised frequently by respondents and besides road safety concerns, speed is a noise multiplier which makes a significant contribution to noise annoyance and ultimately amplifies the potential for poor health outcomes as previously discussed. Similarly, the generally poor state of the roads was also thought to be exacerbating traffic noise and specifically, in the words of one respondent "*the clatter of heavy vehicles hitting potholes at night in the confined space of Crossmichael in the middle of the night"*.

**Recommendations**

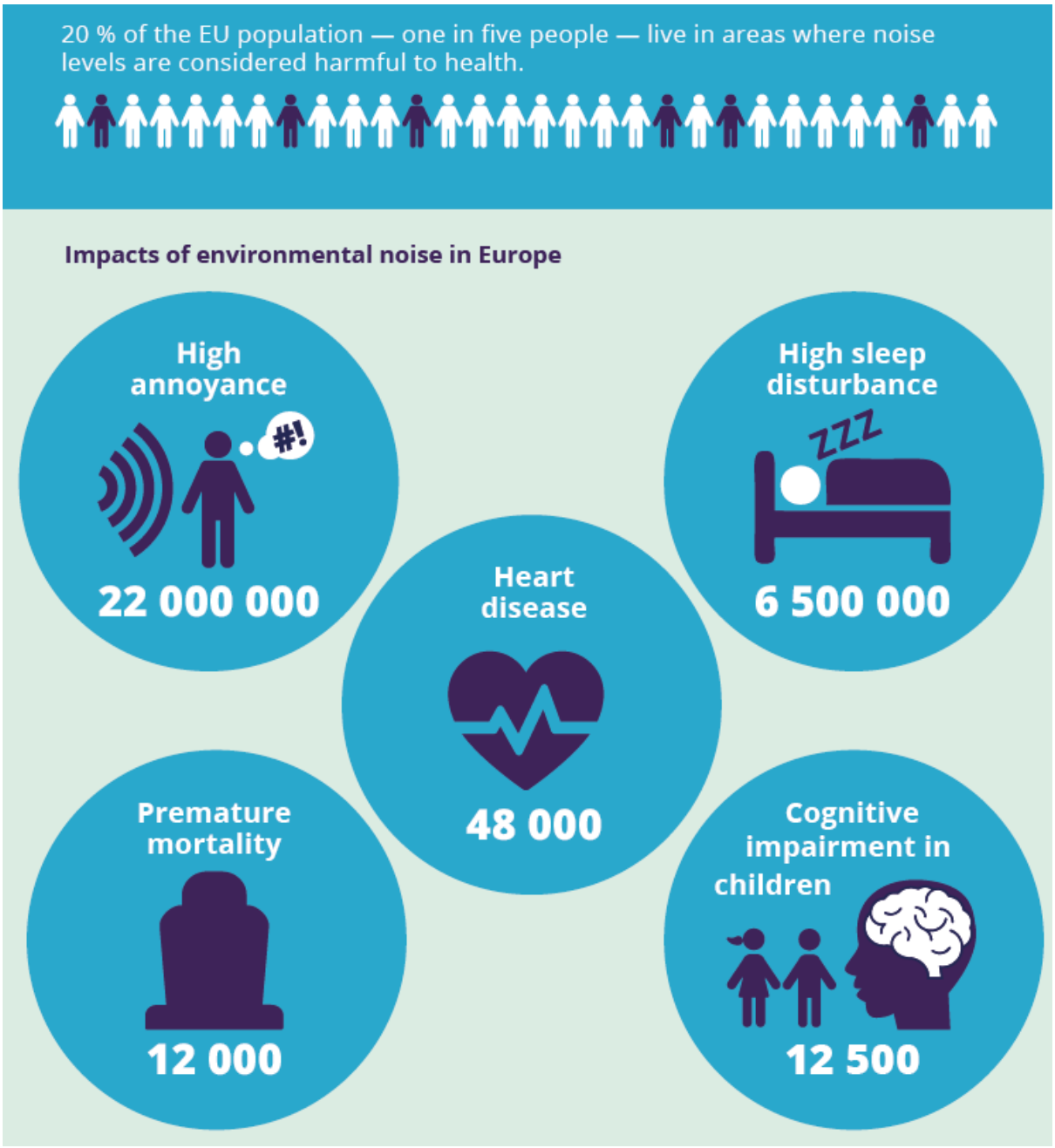
- It will be important for Crossmichael Community Council to consider the results of the survey and to have an opportunity to debate the contents before deciding what action is required. The Chair is invited to decide the process.

- The main recommendation concerns dissemination of survey results. The findings, albeit the product of a small-scale self-report study, with a self-selecting sample, suggests that traffic noise and, in particular, the operation of heavy vehicles at unsocial hours, may be associated with negative health outcomes. This is a matter that ought to be considered by the local directorate of public health, in conjunction with other relevant local authority departments and elected representatives to determine an appropriate response.

- It is suggested that the Community Council make copies of the survey results available to members of the local community with copies to local politicians and local authority officials and importantly, the Director of Public Health for Dumfries and Galloway. Wider dissemination might include a press statement to be drafted by the committee.

- Factors such as traffic speed and road maintenance are important and point towards some practical interventions such as reducing the speed limit through the village of Crossmichael and introducing traffic calming measures. However, the main thrust of the survey results highlights the issue of sleep disturbance caused by the operation of heavy commercial vehicles at unsocial hours. Addressing this issue will require creativity and balance to overcome what are likely to be significant obstacles to implementing what in the end is required – the introduction of traffic measures limiting the operating hours of heavy vehicles on designated roads. Recognising the fact that this issue concerns public health risks provides a new impetus to explore options.

**Appendix 1. Overview of health effects of traffic noise. Source: European Environment Agency Report – Noise in Europe 2020**



**Appendix 2. Impact of traffic noise on child health and cognitive development. Source: *The Guardian*, 3 June 2022**



Friday 3 June 2022 The Guardian

National

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# Traffic noise in classrooms damages children's ability to learn, says study

**Damian Carrington**
*Environment editor*

Road traffic noise significantly slows the development of crucial memory and attention skills in primary school children, research has found.

The study of almost 2,700 children aged seven to 10 years in 38 schools in Barcelona, Spain, is the first to assess the impact of traffic noise on child cognitive development over time, and the first to determine the impact of peaks in noise.

The children in the study are in a critical stage for the development of memory and attention skills. The research found that children exposed to about three times more traffic in the street compared with other pupils had memory development that was 23% slower and attention ability development 5% slower over a year.

Noise is the second most damaging environmental factor to health, after air pollution, and was already known to increase conditions such as heart attacks and diabetes in adults. The UN said in February that urban noise pollution was growing into a "global public health menace", leading to 12,000 early deaths a year in the EU alone and affecting many cities from Bangkok to New York.

But research on the impact of road noise on children had been limited until now. The scientists said many schools suffered noise pollution and measures such as rerouting traffic could reduce both noise and air pollution.

"We do not appreciate that noise can actually be toxic from a physical point of view," said Dr Maria Foraster at the Barcelona Institute for Global Health, who led the study. "We think that we adapt to it, but research has shown that we don't completely - we still have a physiological response."

***'We do not appreciate that noise can be toxic from a physical point of view'***

**Maria Foraster**
*Researcher*

The research revealed that peaks of noise heard inside the classroom, such as the passing of loud lorries or vehicles accelerating away from traffic lights, had more impact than a higher average level of noise. This may be because the peaks divert attention more, said Foraster, and is important because current policies are based solely on average decibels.

The scientists also found that higher noise levels at school were more damaging than at home. "This could be because it affects vulnerable windows of concentration and learning processes," she said.

Prof Iroise Dumontheil, at Birkbeck, University of London, said: "This ... study provides convincing evidence. Considering many European children living in large cities are exposed to high road traffic noise levels, this study has implications for public policy to reduce road traffic noise near schools."

The study, published in the journal PLOS Medicine, tested the children four times across a year and measured noise levels outside the school and in classrooms. The tests assessed children's attention, the ability to focus on a specific task, and working memory, which is the ability to hold information in the mind and use it.

"These two functions are important for learning and develop very rapidly during the primary school years," said Foraster. The functions underpin problem solving, reasoning, mathematics and language comprehension.

The scientists concluded: "Policies to reduce road traffic noise at schools - outside and inside classrooms - could substantially benefit cognitive development and future health."

Noise affects large numbers of people, with at least 20% of the EU population suffering traffic noise levels that are harmful to health, and the proportion is much higher in cities.

The study took into account the effects of air pollution, unlike most previous studies, and levels of family income and education.

"The fact traffic noise harms health and wellbeing is not talked about often enough," said Prof Trevor Cox at the University of Salford. "Arguably, the effect on student learning in schools is the worst harm. This is because any lack of attainment is detrimental to health and well-being for the rest of the students' lives.

"Addressing noise is particularly important for equality, because schools in disadvantaged areas are usually on noisier sites."

**Appendix 3. Individual responses taken from survey**

**Main Street**

1……traffic noise from wood lorries passing at speed just after 4am often wakes me. Lorries-wood lorries do not slow down until after the start of the village when approaching from Parton and pass at speed when leaving the village. Vibration displaces pictures on my walls and glass in display cabinets .

2….empty log lorries at 4 am, travelling double the 30 mph are the worst . The roads are a disgrace through the volume of HGV and farm machinery. If the roads need to be used non-stop, these companies need to resurface road and make a safer path for walking.

3…..lorries (log) start too early. Should be a minimum start time. I don't drive and can't walk to Castle Douglas due to 'no' footpath and the speed of traffic. Not safe, convoy of lorries makes it very unsafe. Upgraded footpath desperately needed.

4…..speeding vehicles through the night is much louder, especially lorries and farm feed lorries. Tractors at silage time is also very disruptive.

5….I find the noise from the forestry lorries very annoying but appreciate that we need to have them and they provide jobs for local people. So I would never complain about them or the farm machinery . Though the driving behaviour of some of these vehicles is not great.

6…My bedroom is at the rear of the house where I can't hear the road noise.

7….Forestry vehicles are passing through the village day/night at all hours which effects my sleep pattern because I'm on a high dose of morphine because of pain. Sleep aids recovery /recuperation but with the excessive traffic flow and bad road surfaces, a whole night's sleep is impossible.

8……The number of forestry vehicles is becoming increasingly more excessive over recent years (leading me to believe it is being used as a rat run) these vehicles listed above have no intention of slowing down through the village. Which is leading to substantive road surface erosion causing more traffic noise from them. But also from more commercial/private vehicles.

9…..Wood lorries operate from 3.00am to 23.00 on at least 4 days per week giving no opportunity for a night's sleep. Farm feed vehicles boom like a percussion instrument when empty. Is there any need for deliveries through the night? Speed is increasingly linked to noise and wood lorries do not slow down when operating through the night. At 50mph through the night the noise is much worse. During silage and harvest time, farmers have no respect for people in the village and operate through the night. In fairness to local farmers, it is usually contractors.

10….Wood lorries are the worst mainly because of the speed through the village and the time they start at. Tractors are only bad with the noise during the silage season.

11...there are too many lorries through the night. They also speed at night.

12……Thumping through pot holes opposite 33

13….Wood lorries travel too fast through the village .Empty log lorries cause the worst noise .They just about always disturb my sleep . Tractors are not too bad through the night as there isn't ever that many going through, but if there is, they are noisy. Cars with loud exhausts can also be quite disruptive.

14……If you buy a cottage on the Main Street, you have to live with the traffic noise . Wood lorries used to wake me up at 4.30-5am. Now after living here for years, they don't disturb my sleep.

15…We live five yards from the centre of the road so multi tonned tractors and stick wagons speeding day and night pass the front door…..I'll leave it to your imagination!

16….We cannot relax in the living room to watch tv/sit comfortably, as the volume and speed of the large/heavy vehicles coming through the village makes it impossible as it continues all hours of the day and night, which also causes sleep disturbance .

17….Due to the condition of the roads and the volume of large traffic, we have had to replace windows with better double glazing, but to no avail as the noise is still high, especially with larger vehicles. Our biggest problem, and I imagine this affects all of the fringes of the village, is vehicular speeding. I would suggest that nearly all traffic speeds into and out of the village, and if not, then at least the majority. This includes the majority of HGV vehicles.

18…When I moved here six years ago, I was well aware of the forestry traffic and accepted it. What I object to with forestry traffic, is the speed which they come up to the speed sign and hit the brakes making everything rattle. Also going out in tandem , especially in the morning. Also, there seems to be a significant increase in the 'bad' lorries (dream, dreamland etc). The enormity of them causes 'wind' and suction. Why are there these lorries on the A713 in the first place?

19….experience of traffic noise near your home. Broken/crumbling road section, everything that hits it, doubles the sound. Empty log lorries speeding through the village, sometimes starting at 4am are the worst. Hitting broken sections of the road at double the speed limit increasing the noise, even better when they fling stones up to chip the cars from broken sections of road. The past two weeks, the amount of log lorries on the road is the worst i have seen in 15 years. Farm traffic can become annoying , specially when doing the silage, more so the mess, left in the village from escaped grass.

**Townhead of Greenlaw**

1…B795 connecting A713-A75. 7.5 tonne weight limit. Empty wood lorries use this route on occasions as do other articulated vehicles. 50 mph speed limit. Most days the speed limit is broken. No monitoring is put in place.

2…personally, far enough away from the main road not to be affected(A713). Occasional get unnecessary use of B795 by vehicles over the 7.5 limit. Only action I see in Crossmichael is to ensure the speed limit. Traffic calming measures may be counter-productive to noise reduction, increasing braking and gear changing would only increase noise.

3.. .It's the speeding of vehicles that adds to the noise.

4... As my home is a little distance away from the road, traffic noise does not bother me.
5...Concerned about the speed of timber wagons on A713, and speed of all vehicles on the B795 approaching crossroads in Townhead from the A75. 50mph limit should be moved further back. Also think footpaths from Crossmichael to Townhead need completing as soon as possible.

6...The speed at which all the traffic passing my house is very dangerous to pedestrians and in particular to wheelchair users, as the condition of the pavement is appalling and they are often forced to use the road because parts of it are overgrown with grass. In wet weather, filthy water is sprayed over the front of my house making a mess of my windows and doors. Heavy goods vehicles, especially timber lorries thunder past and I fear for the foundations of my house, the drains and sewers underground. I feel that some traffic calming resources should be put in place as soon as possible and I would hope the Council treat this matter with the utmost urgency.

7...I truthfully do not exaggerate when I say that traffic continues 19/20 hours per day from 12.30 am every day and this included Sundays. I am woken by a tractor at 2.30 am. Sunday being the quietest day but every other day of the week it is constant. If vehicles are not travelling down, they are heading in the other direction. When the late Mr Ferguson (MSP) came before when my late husband and I complained of the traffic and speed past our house, he was shocked at what we were having to put up with. A small sign was put up to avoid the hidden dip in the road. I don't think it has ever been observed. Already, a life has been claimed here plus umpteen accidents. I have to cross the road to walk on the pavement. I have almost been blown off my feet when these heavy vehicles pass (another accident waiting to happen).

8...The main noise problem comes in the form of timber haulage lorries which seem to come in twos or threes and up to six on occasion. This followed by the vast increase in heavy haulage lorries. Then come the boy racers who use the stretch of road past the rugby club as a race track. Over the past 16 years, the volume of traffic has increased dramatically. Particularly the HGV's . This part of the A713 was not built to take such traffic and will make even worse the state of the road from Castle Douglas to Crossmichael. There are more patches than a quilt, and more humps and dips (some now getting quite deep) and getting worse each year.

9...the main problem is the coarse road surface with tyre noise, especially heavy commercial vehicles with their many tyres being intrusive and making conversation at the front of the house at times impossible. Quite simply, a smooth road surface would mitigate much of the noise problem at our home.The present road surface is a disgrace.

10...Unfortunately when the good weather arrives, farm machinery causes more noise . Although they are only doing their job. Wood lorries are annoying as they travel the road at all time of the day.

11... No speed restrictions at Square Point so vehicles accelerate from Townhead and Castle Douglas with little regard. For national speed limit. It's dangerous standing outside our own front door or walking on the pathway. Flying debris from forestry vehicles, buffeting by the wind as vehicles travel past at speed. Pulling in and out of our own property or when receiving deliveries is risky due to the speed and disregard for residential properties. Lack of care and consideration. Volume and speed of traffic are a main concern, mainly down to forestry vehicles. It's not only dangerous but affects the value of the property as well as windows constantly needing cleaning due to spray from the road which is excessive due to the speed of the traffic.

12...There are lots of heavy vehicles using the roads, breaking up road surfaces, causing safety problems and ignoring road and speed signs. Tractors going through at early hours in the morning and cars revving their engines, log wagons one after another going through day and night. It would be nice to get a good night's sleep.

| | |
|---|---|
| **From:** | Redacted Trevor Procter |
| **To:** | Steven McClernon |
| **Cc:** | Redacted |
| **Subject:** | Section 36 Application for Lairdmannoch Energy Park |
| **Date:** | 05 September 2023 21:44:21 |

Re: Lairdmannoch Energy Park

*Dear Steven*

On behalf of a group representing local residents of the Glenkens, namely the Help Save Mochrum Fell Group, we would like to suggest the following Scoping requests for the Section 36 Application for Lairdmannoch Energy Park.

1. We suggest that a Tourism Impact Assessment should be required for this application.

2. There should be a full carbon balance calculation to include all the mining of materials necessary for the wind farm in all countries; the processing and manufacturing of components, international shipping and transportation as well as all the construction in this country including processing for cement production.

The carbon balance should also include the CO2 emissions from backup generation needed when there is no wind.
Usually wind farm developers CO2 comparison is wind energy produced electricity compared to coal produced electricity. The comparison should be between what the likely options are today —not what they were before. In other words, compare wind to nuclear, hydro or combined cycle gas generation, not coal as coal fired generation has been mothballed.

There are no trees on the site but CO2 is sequestered in the soil and peat. This too must be taken into account as any disturbance of the ground releases CO2.

3. Fire Safety concerns should also be addressed with the Fire Service called on as Consultees.

Battery storage throws up very specific concerns with large lithium batteries meaning the fire has to be left to burn out as the fire service cannot tackle these sorts of blazes. Concerns over fumes, debris, pollution of water

courses and the likely spread of fire to forestry need very specific contingency plans, mitigation and evacuation procedures.

Battery energy storage systems (BESS) using lithium-ion batteries are widely considered as potentially hazardous owing to the batteries' inherent thermal runaway characteristic. They have been responsible for fires in many countries of the world including America, Australia, S.Korea (23 fires in 18 months), Belgium and Britain. U.S. Consumer Product Safety Commission reported 29 Mar 2022 that there were more than 25,000 issues involving fires or overheating stemming from lithium ion batteries in a five-year period. These fires are incredibly hard to extinguish and can release hydrofluoric acid and highly toxic gases which are potentially life threatening. In view of the high risk attached to the energy storage system proposed in the above application, and its proximity to human habitations, the precautionary principle should be invoked and 'unintended consequences' thoroughly investigated.

D&G Fire Service is mainly staffed by retained firemen and women so response times can be lengthy due to operatives having to travel from work to the fire station and then out to remote sites on minor roads.

Thank you for considering these requests.

*Kind regards*
*Elaine & Trevor Procter for Help Save Mochrum Fell Group.*

Scoping opinion Lairdmannoch Energy Park, Dumfries and Galloway

Dear Mr McClernon,

With regards to the above the following points arise

a) Protection of wildlife and habitat
b) Protection of food chains
c) Health issues including damage to fertility rates in humans and wildlife
d) Style and construction of wind turbines, and future disposal of worn out structures.

**These points are raised in an endeavour not to prevent harnessing wind power and its storage but rather to raise questions around how windfarms can be made truly green and thus prevent problems in the future of an environmentally damaging nature. To do this there needs to be conditions applied to erection of such structures that support research into the issues raised and mitigation, through some form of grant expectations to be provided by relevant companies. ( See references to attached articles and italicised questions.**

**a) Protection of wildlife and habitat**

It is now a well registered fact that wind turbines are the cause of loss of habitat for wildlife. With nearly 16 million trees lost in Scotland to date to wind farm construction. **( see information request article Doc 1)** *How will this be counterbalanced by the company?* Use of green credits/carbon off setting we know are coming into disrepute. It is well publicised that conditions for these do not replace loss at the point of origin as with tree planting and where occurring elsewhere as an offset they are not respected in the countries being paid for this offset. Or indeed cause harm to indigenous populations. Out of sight should not mean out of mind. *How therefore can the point of origin habitats be protected as far as possible?*

*How also will the company restore any land travelled over to build to its normal state or indeed protect it during construction?*

It is also known that studies in other countries reveal that loss of bird life is increased through impact with turbine blades , especially rare and protected species such as Kites, Harriers and eagles. **(see example article on Birds and Bats Docs 2 & 3)** This proposed site is within the flying range of local re-generation/re-introduction of several species that local people and organisations have worked hard on in many years. Refer to Golden Eagles near Moffat, Osprey , white fronted geese and Peregrin Falcons at Threave and Red Kites at Loch Ken. ( note example flying ranges are: Eagle 20-200km, Red kite 20-30km and Osprey up to 5,000 Km for migration and 2 -6 Km for feeding) Wind farms near the local breeding sites will inevitably have a significant risk impact. Has or would the company consider a different design to the traditional windmill blades, say for instance blades that spin in a vertical rotation rather than the current circular rotation? This design takes up less air space and thus offers less collision space. 

*How will the company work with the local organisations involved in protection of endangered species and the environment?*

**b) Protection of food chains**

This is often an unacknowledged issue but needs some significant attention and research if we are to avoid not only wild life food chains becoming at risk but also the human food chain. Recent research revealed that there are less and less 'winged insects' around to the degree that a plea was put out to not kill house flies as they help with pollination as do many others alongside bees. **(see article 'stark warning' Doc 4)** These small but somewhat at times annoying creatures are not only important as food for birds and amphibians but also for our crops of fruit and vegetables. If the latter are not pollinated at local/national level then we will have to import more food, not a terribly eco-friendly answer if we increase our food miles. *Is the company prepared to research ways in which these small but all important creatures can be kept away from wind farms. What are the options especially for Vertical blades to be netted without lowering wind velocity required for production of energy?*

**c) Health issues including damage to fertility rates in humans and wildlife**

Given the location of the possible windfarm the question of water courses arises for two reasons. In the first place there is the issue of off-grid private water supplies. Many homes in that area rely on small streams and wells fed by streams for their water supply. If construction alters the source area for such streams or wells then people's homes may become uninhabitable. It would be wise therefore for any scoping to research into how many and where these homes are. Whilst Scottish Environmental Agency will provide bottled water where supply is interrupted this can only support drinking and cooking with the odd kettle for a strip wash. It cannot support the washing of clothes nor shower or bathing facilities . This particularly came to light in the early summer in the area when supplies dried up. *Would the company , alongside the Scottish Government , be prepared to put on mains water to properties if they became affected? Alongside this is the issue of ensuring that water supplies do not become contaminated either in construction or during the use of the wind farm?* Given that recent Freedom of Information requests asked about contamination of water supplies and the relevant monitoring of the same; it was brought to light that no such monitoring is carried out by the Scottish Government nor the Local Council .

Given that erosion of blades leads to the need to power wash their edges and for them to be smoothed this means inevitably that waste products are washed or dropped to the ground, in turn rained in , and with the possibility of contamination of water courses. *Will the company be prepared to monitor such possibly contamination? Likewise train local young people to carry out such monitoring, providing them with job opportunities?* Contamination checks are important as whilst earlier reference is made to private water supplies in the end contamination of water on high ground leads to contaminates entering streams and flowing into rivers , reservoirs and lochs . In turn this means even the mains water supply can be contaminated over time. Wind turbines also catch fire causing air contamination through the release of harmful fumes. This proposed site is close to various communities. *What evacuation plans would there be in place if people need to leave their homes in the event of such a fire? How and what training will be provided to local emergency services to not only protect local communities but also service personnel in the event?*

*Lastly, given the over stretched nature of our local emergency services could they respond adequately?* The proposed site is in between a large number of villages and communities and ancient woodlands such as at Laurieston and the Galloway Forest. Unless connecting runs of trees are removed between this Forests then the capacity of a runaway fire is great.. It also is surrounded by local tourist attractions including National sites. (see map) *Can the company explain how they would mitigate against loss of trade associated with tourism during and post build, as this will impact on health through impact on income?* The paragraph below also seeks answers regarding health related to the materials used. ( **Doc 5 see latest MPs request reference battery storage**)

d) Style and construction of wind turbines, and future disposal of worn out structures.

Wind turbine blades are made often of non-recyclable materials, namely plastics, with some severely threatening elements/chemicals that cause harm to life **( Doc 6 see manufacturer's health hazard sheet for Bisphenol A reference handling, fertility, lung /skin infection and fire handling).** *To what extent is the company willing to research into alternative materials for future production and how will they remove and dispose of the turbines at the end of their life?* More and more countries are having to accommodate turbine grave yards in desert regions in America and Australia and rural landfills elsewhere. Cutting them up to make bridges or bike sheds might seem to be an answer but it still doesn't deal with the final problem of something that is non-disposable at this time, it simple pushes the issue down the road for future generations. *Would the company engage in research to find a way of reversing the makeup of the material so it can be reused or disposed of safely?* **( Doc 7 see sustainability recycling article)**

Please note Dumfries and Galloway has a number of MOD sites. Therefore the MOD needs to be consulted as large height wind turbines can affect their communications etc. *Will this happen?*

Unfortunately , this also reduces site possibilities in the area and is pushing these energy requirements further and further into farm land, tourist sites and places of protected scientific interest as well as impacting on the designations for UNESCO and Biosphere importance. ( **See Doc 8 'weep and Read**)

**As stated at the beginning of this response this is not about stopping the harnessing of wind energy or storage but rather outlining some problems to be resolved in which one would hope a responsible company would wish to play a major part through supporting research, monitoring and the development of more environmentally protective approaches.**

**It would be most welcome if the scoping covered the questions raised ( in italics) and a response received in writing. These responses need to cover the above important questions with clear assurances otherwise the proposal should not be accepted.**

| | |
|---|---|
| **From:** | Email redacted Jean Adams |
| **To:** | Steven McClernon |
| **Subject:** | Twynholm CC Response to Lairdmannoch Energy Park Proposal |
| **Date:** | 07 December 2023 14:11:00 |
| **Attachments:** | Dr Euan Mearns.docx<br>Figure 4 - Possible views of hubs Wind Bare Ground ZTV 45km.pdf<br>Doc 5 Battery storage plants planned for Net Zero Britain.odt<br>40418_Figure 2_CP_039c_Environmental Designations within 10km.pdf |

**Twynholm Community Council re: Scoping Opinion Lairdmannoch Energy Park, Dumfries and Galloway**

Dear Mr McClemon

Regarding the above proposed development, the following points will need to be addressed.

## 1. Need for further development of windfarms

While no-one questions the necessity to develop a net zero emissions policy in response to global warming, there needs to be further development and scrutiny into the economics of the logistics in delivering renewable energy to where it is needed, and who is to fund this delivery. Dr Euan Mearns, Honorary Research Fellow at the University of Aberdeen raises the matter in the following points,

a) The historic siting of energy generation near to population centres is no longer an option if renewable energy is to be developed, but this leads to a decline in the efficiency of delivering this energy to where it is needed, but also an increased cost of its delivery, which at present is borne by the consumers, in the form of a standing charge.

b) The need for energy to propel it to the areas where it is needed is also often ignored when calculating the amount of renewable energy generated. For instance, a project generating peak power capacity, may well need to use a very considerable percent of this power to deliver it to its market

c) This problem also raises questions about possible export of renewable energy, for instance to England and Europe. Although the infrastructure for delivering the energy has been increased threefold, in the decade in which this took place, it was actually energy IMPORTS which increased ninefold. There is also a close correlation in both energy output and uptake between the UK and Europe, which indicates that when the UK has surplus energy to export, Europe also has a surplus, and does not need to import it. When wind supply is low in Europe, it is also low in the UK, thus preventing the export of energy when it is needed.

d) In addition, it will still be necessary to maintain the infrastructure to provide generating capacity for times when renewable energy sources fall short of requirements. (See attached Document)

## 2. Criteria for the choice of location and its impact on the local area in

**a) Tourism.** This is one of the main industries in Dumfries and Galloway, and sufficient note should be taken as the proposal's visibility and effect the Energy Park could have on this sector of the locality. There is continual pressure to increase the tourism sector, as evidenced by the application submitted that the area could be Scotland's newest National Park. The development would be close to National Scenic Areas, Special Area of Conservation, a Special Protection Area, Site of Special Scientific Interest, a National Nature Reserve, Areas on the Ancient Woodland Inventory, a Council Local Landscape

Designation, and actually adjacent to a Archaeologically Sensitive area. (See Wind2 Figure 2, Environmental Designations within 10 km Figure 4 - Possible views of hubs Wind Bare Ground ZTV 45km.pdf). (Attached) Such areas contribute to the reasons for choosing to visit an area to holiday, and it is inevitable that the turbines will be seen from many of them. In a recent article published (October 31st 2023) by National Geographic Traveller UK, Galloway and South Ayrshire was included in 'The Cool List 2024: the 30 most exciting destinations to visit in 2024'. The Galloway and South Ayrshire Biosphere is identified, having just had its area extended, and as part of Scotland's new UNESCO Trail. (The Cool List 2024: the 30 most exciting destinations to visit in 2024 (nationalgeographic.com)

Wind2 provides its own suggestion as to the visibility from various points in the area, but this suggested indication needs to be checked carefully, as the turbines are greater than the height of Blackpool Tower. (Figure 4 - Possible views of hubs Wind Bare Ground ZTV 45km.pdf) (Attached) Blackpool Tower can be seen over 20 km inland. By definition, the Tower is at sea level, while the turbines of comparable height will be in an elevated position. **Careful consideration needs to be given to the impact of the Energy Park on local tourism, including agricultural stakeholders who are increasingly diversifying into projects in tourism in order to maintain the viability of their land.**

**b) Archaeological heritage**

The proposed development is immediately adjacent to an important site in Galloway's and Scottish archaeological heritage. The land around Loch Mannoch contains archaeological remains of great antiquity, chief among those being a well-preserved burial cairn around 15 metres in diameter.

In addition a little to the south-east is a "druidical stone circle", as described by the 1851 OS Kirkcudbrightshire series mapmakers. The outer ring of 10 stones has been almost buried over the countless years since our forebears placed them there. To have made such an effort would suggest the importance of the site to our ancestors, which the development of the Energy Park would seem to disregard.

The central obelisk, which is lying flat, is much bigger, and further down the loch on the western bank is a large standing stone which can be seen at the distance of approximately a kilometre's distance.

Consultants have designated part of the site as "archaeologically sensitive" and the proposed development would perhaps suggest a disregard for this and the sensitivity of the location.

**The proposal for the choice of this site should seriously consider the disregard for our archaeological heritage, and the damage which could be done practically to the site, and its inevitable detrimental visual impact.**

**c) Environment** An additional aspect of the proposal which needs careful assessment is its effect on both the natural and living environment. The area is rich in wildlife, including such species as red kite, pine marten and golden eagles, all of which are increasing in the area. Pine marten and golden eagles have declined over the years, throughout Scotland, and the gradual increase in Galloway could be inhibited by this development, especially in the ongoing reintroduction of golden eagles to Southern Scotland.

Again, the possibility of seeing wildlife impacts on a choice of holiday destination. The construction of the project will generate possible pollution of the watercourses in the area, especially in the reservoir and Tarff Water which proceeds down the valley where it is surrounded by fields used for the grazing of livestock, The battery storage aspect needs to be carefully considered for the possibility of them overheating and being likely to spontaneously ignite. The

prospect of such an eventuality must be closely examined, as the possibility of a fire in the centre of the surrounding forest, possibly spreading to Galloway Forest Park itself could be catastrophic. The means to control such a fire are far beyond the capabilities of such a rural area, especially as peat in the area would continue to fuel the fire for an indeterminate time. Concern has been expressed in Parliament regarding such possible occurrences. (See Attached Document)
**All such considerations must be taken into account especially in view of the repeated occurrence of 'once in a lifetime' disasters which are becoming more and more frequent around the world.**

**d) Legacy. Consideration must be given, and responsibility taken by the developer for the long-term legacy that will ensue once turbines need to be decommissioned.** Turbines are made of materials which are not easy to recycle, and they will need to be erected using huge amounts of concrete, which would need to be physically removed, as we all know how long concrete structure can last without intervention. The legacies of the UK's defence measures during World War 2 are still visible throughout the country, but as these are of historical interest and importance, they cannot be compared to leaving redundant concrete plinths in situ.

**While the need for renewable energy is not in dispute, consideration must be given to siting generating equipment in appropriate areas. Dumfries and Galloway is already one of the areas with the most wind farms in Scotland, and still has a huge number of proposals in progress, which would increase the number to a detrimental extent.**

The Scottish Government issued a statement only very recently stating that, "While imperative to meet our net zero targets, it is also vital this is delivered in a way that is fully aligned with our rich natural heritage". The development of Lairdmannoch Energy Park should also 'be aligned with our rich' **historic** 'heritage'. The Scottish Government also declared that it would 'continue to work together with industry, non-governmental organisations, our agencies, communities and wider partners to achieve this.'

It is to be hoped that this statement is adhered to, and no party is ignored or given disproportionate weight and credence at the expense of any of the others mentioned.

ANNEX B

# Marine Directorate – Science Evidence Data and Digital (MD-SEDD) advice on freshwater and diadromous fish and fisheries in relation to onshore wind farm developments.

**July 2020 updated September 2023**

Marine Directorate – Science Evidence Data and Digital (MD-SEDD) provides internal, non-statutory, advice in relation to freshwater and diadromous fish and fisheries to the Scottish Government's Energy Consents Unit (ECU) for onshore wind farm developments in Scotland.

Atlantic salmon (*Salmo salar*), sea trout and brown trout (*Salmo trutta*) are of high economic value and conservation interest in Scotland and for which MD-SEDD has in- house expertise. Onshore wind farms are often located in upland areas where salmon and trout spawning and rearing grounds may also be found. MD-SEDD aims, through our provision of advice to ECU, to ensure that the construction and operation of these onshore developments do not have a detrimental impact on the freshwater life stages of these fish populations.

The Electricity Works (Environmental Impact Assessment) (EIA) (Scotland) Regulations (2017) state that the EIA must assess the direct and indirect significant effects of the proposed development on water and biodiversity, and in particular species (such as Atlantic salmon) and habitats protected under the EU Habitats Directive. Salmon and trout are listed as priority species of high conservation interest in the Scottish Biodiversity Index and support valuable recreational fisheries.

A good working relationship has been developed over the years between ECU and MD-SEDD, which ensures that these fish species are considered by ECU during all stages of the application process of onshore wind farm developments and are similarly considered during the construction and operation of future onshore wind farms. It is important that matters relating to freshwater and diadromous fish and fisheries, particularly salmon and trout, continue to be considered during the construction and operation of future onshore wind farms.

In the current document, MD-SEDD sets out a revised, more efficient approach to the provision of our advice, which utilises our generic scoping and monitoring programme guidelines (https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren). This standing advice provides regulators (e.g. ECU, local planning authorities), developers and consultants with the information required at all stages of the application process for onshore wind farm developments, such that matters relating to freshwater and diadromous fish and fisheries are addressed in the same rigorous manner as is currently being carried out and continue to be fully in line with EIA regulations. At the request of ECU, MD-SEDD will still be able to provide further and/or bespoke advice relevant to freshwater and diadromous fish and fisheries e.g. site specific advice, at any stage of the application process for a proposed development, particularly where a development may be considered sensitive or contentious in nature.

MD-SEDD will continue undertaking research, identifying additional research requirements, and keep up to date with the latest published knowledge relating to the

impacts of onshore wind farms on freshwater and diadromous fish populations. This will be used to ensure that our guidelines and standing advice are based on the best available evidence and also to continue the publication of the relevant findings and knowledge to all stakeholders including regulators, developers and consultants.

MD-SEDD provision of advice to ECU

- MD-SEDD should not be asked for advice on pre application and application consultations (including screening, scoping, gate checks and EIA applications). Instead, the MD-SEDD scoping guidelines and standing advice (outlined below) should be provided to the developer as they set out what information should be included in the EIA report;
- if new issues arise which are not dealt with in our guidance or in our previous responses relating to respective developments, MD-SEDD can be asked to provide advice in relation to proposed mitigation measures and monitoring programmes which should be outlined in the EIA Report (further details below);
- if new issues arise which are not dealt with in our guidance or in our previous responses, MD-SEDD can be asked to provide advice on suitable wording, within a planning condition, to secure proposed monitoring programmes, should the development be granted consent;
- MD-SEDD cannot provide advice to developers or consultants, our advice is to ECU and/or other regulatory bodies.
- if ECU has identified specific issues during any part of the application process that the standing advice does not address, MD-SEDD should be contacted.

**MD-SEDD Standing Advice for each stage of the EIA process**

Scoping

MD-SEDD issued generic scoping guidelines (https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren) which outline how fish populations can be impacted during the construction, operation and decommissioning of a wind farm development and informs developers as to what should be considered, in relation to freshwater and diadromous fish and fisheries, during the EIA process.

In addition to identifying the main watercourses and waterbodies within and downstream of the proposed development area, developers should identify and consider, at this early stage, any areas of Special Areas of Conservation where fish are a qualifying feature and proposed felling operations particularly in acid sensitive areas.

If a developer identifies new issues or has a technical query in respect of MD-SEDD generic scoping guidelines then ECU should be informed who will then co-ordinate a response from MD-SEDD.

Gate check

The detail within the generic scoping guidelines already provides sufficient information relating to water quality and salmon and trout populations for developers at this stage of the application.

Developers will be required to provide a gate check checklist (annex 1) in advance of their application submission which should signpost ECU to where all matters relevant to freshwater and diadromous fish and fisheries have been presented in the EIA report. Where matters have not been addressed or a different approach, to that specified in the advice, has been adopted the developer will be required to set out why.

EIA Report

MD-SEDD will focus on those developments which may be more sensitive and/or where there are known existing pressures on fish populations (https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/fishreform/licence/status/Pressures). The generic scoping guidelines should ensure that the developer has addressed all matters relevant to freshwater and diadromous fish and fisheries and presented them in the appropriate chapters of the EIA report. Use of the gate check checklist should ensure that the EIA report contains the required information; the absence of such information may necessitate requesting additional information which may delay the process:

Developers should specifically discuss and assess potential impacts and appropriate mitigation measures associated with the following:

- any designated area, for which fish is a qualifying feature, within and/or downstream of the proposed development area;
- the presence of a large density of watercourses;
- the presence of large areas of deep peat deposits;
- known acidification problems and/or other existing pressures on fish populations in the area; and
- proposed felling operations.

Post-Consent Monitoring

MD-SEDD recommends that a water quality and fish population monitoring programme is carried out to ensure that the proposed mitigation measures are effective. A robust, strategically designed and site specific monitoring programme conducted before, during and after construction can help to identify any changes, should they occur, and assist in implementing rapid remediation before long term ecological impacts occur.

MD-SEDD has published guidance on survey/monitoring programmes associated with onshore wind farm developments (https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren) which developers should follow when drawing up survey and/or monitoring programmes.

If a developer considers that such a monitoring programme is not required then a clear justification should be provided.

Planning Conditions

MD-SEDD advises that planning conditions are drawn up to ensure appropriate provision for mitigation measures and monitoring programmes, should the development be given consent. We recommend, where required, that a Water Quality Monitoring Programme, Fisheries Monitoring Programme and the appointment of an Ecological Clerk of Works, specifically in overseeing the above monitoring programmes, is outlined within these conditions and that MD-SEDD is consulted on these programmes.

Wording suggested by MD-SEDD in relation to water quality, fish populations and fisheries for incorporation into planning consents:

1. No development shall commence unless a Water Quality and Fish Monitoring Plan (WQFMP) has been submitted to and approved in writing by the Planning Authority in consultation with Marine Directorate – Science Evidence Data and Digital (MD–SEDD) and any such other advisors or organisations.

2. The WQFMP must take account of the Scottish Government's MD-SEDD guidelines and standing advice and shall include:

    a. water quality sampling should be carried out at least 12 months prior to construction commencing, during construction and for at least 12 months after construction is complete. The water quality monitoring plan should include key hydrochemical parameters, turbidity, and flow data, the identification of sampling locations (including control sites), frequency of sampling, sampling methodology, data analysis and reporting etc.;

    b. the fish monitoring plan should include fully quantitative electrofishing surveys at sites potentially impacted and at control sites for at least 12 months before construction commences, during construction and for at least 12 months after construction is completed to detect any changes in fish populations; and

    c. appropriate site specific mitigation measures detailed in the Environmental Impact Assessment and in agreement with the Planning Authority and MD-SEDD.

3. Thereafter, the WQFMP shall be implemented within the timescales set out to the satisfaction of the Planning Authority in consultation with MD- SEDD and the results of such monitoring shall be submitted to the Planning Authority on a 6 monthly basis or on request.

**Reason:** To ensure no deterioration of water quality and to protect fish populations within and downstream of the development area.

Sources of further information

NatureScot (previously “SNH”) guidance on wind farm developments - https://www.nature.scot/professional-advice/planning-and-development/advice- planners-and-developers/renewable-energy-development/onshore-wind- energy/advice-wind-farm

Scottish Environment Protection Agency (SEPA) guidance on wind farm developments – https://www.sepa.org.uk/environment/energy/renewable/#wind

A joint publication by Scottish Renewables, NatureScot, SEPA, Forestry Commission Scotland, Historic Environment Scotland, Marine Scotland Science (now MD-SEDD) and Association of Environmental and Ecological Clerks of Works (2019) Good Practice during Wind Farm Construction - https://www.nature.scot/guidance- good-practice- during-wind-farm-construction.

**Annex 1 (revised September 2023)**

**Marine Directorate – Science Evidence Data and Digital (MD-SEDD) – EIA Checklist**

The generic scoping guidelines should ensure that all matters relevant to freshwater and diadromous fish and fisheries have been addressed and presented in the appropriate chapters of the EIA report. Use of the checklist below should ensure that the EIA report contains the following information; the absence of such information ***may necessitate requesting additional information*** which could delay the process:

| **MD-SEDD** Standard EIA Report Requirements | Provided in application YES/NO | If YES – please signpost to relevant chapter of EIA Report | If not provided or provided different to **MD-SEDD** advice, please set out reasons. |
|---|---|---|---|
| 1. A map outlining the proposed development area and the proposed location of:<br>o the turbines,<br>o associated crane hard standing areas,<br>o borrow pits,<br>o permanent meteorological masts,<br>o access tracks including watercourse crossings,<br>o all buildings including substation, battery storage;<br>o permanent and temporary construction compounds;<br>o all watercourses; and<br>o contour lines; | | | |

| | | | |
|---|---|---|---|
| 2. A description and results of the site characterisation surveys for fish (including fully quantitative electrofishing surveys) and water quality including the location of the electrofishing and fish habitat survey sites and water quality sampling sites on the map outlining the proposed turbines and associated infrastructure.<br><br>**This should be carried out where a Special Area of Conservation (SAC) is present and where salmon are a qualifying feature, and in exceptional cases when required in the scoping advice for other reasons. In other cases, developers can assume that fish populations are present**; | | | |
| 3. An outline of the potential impacts on fish populations and water quality within and downstream of the proposed development area; | | | |
| 4. Any potential cumulative impacts on the water quality and fish populations associated with adjacent (operational and consented) developments including wind farms, hydro schemes, aquaculture and mining; | | | |

| | | | |
|---|---|---|---|
| 5. Any proposed site specific mitigation measures as outlined in **MD-SEDD** generic scoping guidelines and the joint publication "Good Practice during Wind Farm Construction" (https://www.nature.scot/guidance-good-practice-during-wind-farm-construction); | | | |
| 6. Full details of proposed monitoring programmes using guidelines issued by **MD-SEDD** and accompanied by a map outlining the proposed sampling and control sites in addition to the location of all turbines and associated infrastructure.<br><br>**At least 12 months of baseline pre-construction data should be included. The monitoring programme can be secured using suitable wording in a condition.** | | | |
| 7. A decommissioning and restoration plan outlining proposed mitigation/monitoring for water quality and fish populations.<br><br>**This can be secured using suitable wording in a condition.** | | | |

| Developers should specifically discuss and assess potential impacts and appropriate mitigation measures associated with the following: | Provided in application YES/NO | If YES – please signpost to relevant chapter of EIA Report | If not provided or provided different to **MD-SEDD** advice, please set out reasons. |
|---|---|---|---|
| 1. Any designated area **(e.g. SAC),** for which fish is a qualifying feature, within and/or downstream of the proposed development area; | | | |
| 2. The presence of a large density of watercourses; | | | |
| 3. The presence of large areas of deep peat deposits; | | | |
| 4. Known acidification problems and/or other existing pressures on fish populations in the area; and | | | |
| 5. Proposed felling operations. | | | |