

Craiginmoddie wind farm

Environmental Impact Assessment Scoping Report

May 2020

CONTENTS

1	INTRODUCTION	1
2	EIA REGULATORY FRAMEWORK	2
3	SITE DESCRIPTION AND DESCRIPTION OF THE PROPOSED DEVELOPMENT	5
4	PLANNING POLICY CONTEXT	9
5	SCOPE OF THE EIA	18
6	EIA ASSESSMENT METHODOLOGY	65
7	SUMMARY	68

Figures

- Figure 1 Site Boundary
- Figure 2 Turbine Layout
- Figure 3 Zone of Theoretical Visibility to Tip Height
- Figure 4 Landscape Character
- Figure 5 Landscape Designation and Wild Land Area

1 INTRODUCTION

- 1.1 Energiekontor UK Ltd is evaluating the potential of land at Craiginmoddie in South Ayrshire, ("the Site") for the development of a wind farm of approximately 16 turbines each between 180 - 230m blade tip heights with generating capacity of around 90 MW including associated crane pads, access tracks, a substation and temporary construction compound ("the Proposed Development") under Section 36 of the Electricity Act (1989).
- 1.2 The Site (Figure 1) formed part of larger area that was subject of the Section 36 Hadyard Hill windfarm Extension (ECU 00003118) submitted by SSE in 2015, comprising of 31 turbines (subsequently reduced to 22). SSE withdrew their application prior to its determination by Scottish Ministers.

Energiekontor UK Ltd

- 1.3 Energiekontor UK Ltd is a renewable energy development company with offices in Glasgow, Edinburgh and Leeds. The company was formed in 1999 and develops onshore wind and solar farms throughout the UK. We have eight operational sites in the UK with permissions in place for a further eight wind farms, seven of which are located in Scotland. We are a complete service company that identifies potential wind farm sites and promotes them through the planning process.
- 1.4 If permission is obtained we manage the finance and construction processes before managing our sites for their full operational lifecycle. We have an operations team in Glasgow who are responsible for operating and maintaining our sites in Scotland. In 2018 we became the first developer to build a subsidy-free wind farm in the UK.

2 EIA REGULATORY FRAMEWORK

What is EIA

- 2.1 Environmental Impact Assessment (EIA) is a statutory process that is governed by UK and European law. It aims to improve the environmental design of a development proposal and provides decision-makers with sufficient information about the potential environmental impacts of a proposal.
- 2.2 The Report of the EIA (EIAR), prepared during the EIA process, sets out the environmental information about a scheme, including a description of the proposal, its predicted environmental effects and the measures proposed to ameliorate any adverse effects.

The EIA Process

- 2.3 The EIA follows an iterative process that usually follows the following stages:
- Screening is the first, optional, stage of the EIA process where the relevant authorities decide whether EIA is required;
 - Once it has been agreed that EIA is required, scoping is undertaken to define what should be assessed as part of the EIA and reported in the EIAR. This is usually done in partnership between the applicant and the relevant determining authority;
 - With the scope set, relevant information on the environmental baseline conditions is collected. This information is then used initially to understand the dynamics of the likely environmental effects and to inform the design of the project to minimise the potential for significant adverse effects;
 - The formal assessment process is then undertaken on the design parameters to define the significant effects of the project both on its own and in combination with other projects in close proximity;
 - Any significant adverse effects that are identified during the formal assessment process are then reviewed against the design to consider whether alterations could be made to minimise the effect. Should this occur the formal assessment process is reiterated; and
 - Where significant adverse effects cannot be minimised through alterations to the design itself, mitigation measures are considered. Monitoring and compensation may also be considered to measure the actual significance of the effect during and post-construction, to allow the management of mitigation where appropriate and to provide compensation where considered appropriate.
- 2.4 Once the EIA is completed, the EIAR is submitted to the relevant authority for consideration.

Screening – Is EIA Required

- 2.5 The first stage of the EIA process is to screen with the relevant authority whether a development would constitute EIA development.

- 2.6 Development projects that are described within Schedule 1 of the Electricity Works (Environmental Impact Assessment) (EIA) (Scotland) Regulations 2017 (the "EIA Regulations"), will always require EIA and are referred to as 'Schedule 1 Developments'.
- 2.7 Development projects listed in Schedule 2 of the EIA Regulations that are located in a 'sensitive area' or exceed one of the relevant criteria or thresholds given in Schedule 2 are referred to as 'Schedule 2 Developments'. Not all Schedule 2 Developments will require EIA as only a development project that is likely to have significant environmental effects by virtue of its size, location or nature will require such assessment. A development project that requires EIA is referred to as 'EIA development'.
- 2.8 In this case, the Proposed Development (as detailed within Section 4 of this Report) is of a type described within Schedule 2 as an installation for the harnessing of wind power for energy productions. It is not located within a 'sensitive area' as defined by the EIA Regulations, however, the project would exceed both of the applicable thresholds as it involves more than two wind turbines with hub heights of more than fifteen metres.
- 2.9 The scale, nature and location of the Proposed Development are such that, in order to allow the environmental impacts of the project to be appropriately considered, Energiekontor UK Ltd has taken the decision to voluntarily undertake EIA in this case. Therefore, no Screening Opinion will be sought from the Energy Consent Unit.

Scoping – What to Consider

- 2.10 Once it has been determined that an EIA is required, the next stage of the process is scoping. Scoping is an exercise conducted at an early stage in the EIA process and is designed to ensure that the environmental studies provide all the relevant information on:
- The impacts of the project, in particular focusing on the significant effects;
 - The alternatives; and
 - Other matters considered to be relevant.
- 2.11 The findings of this exercise define the 'scope' of the environmental information to be provided and the terms of reference for the environmental studies to be undertaken. The scope of the work however remains flexible and can be amended should new issues or information arise while undertaking the EIA.

Purpose and Structure of this Report

- 2.12 The purpose of this Report is to formally request the Scottish Ministers to adopt a Scoping Opinion in accordance with Regulation 12(1) of the EIA Regulations. As required under Regulation 12(2) this Report includes:
- A description of the location of the development, including a plan sufficient to identify the land (see Section 3 of this Report with the site boundary shown on Figure 1); and
 - A brief description of the nature and purpose of the development and its likely significant effects on the environment (see Section 4 of this Report with the draft turbine layout on Figure 2).
- 2.13 Submitting a request for a Scoping Opinion will allow Energiekontor UK Ltd to be clear about what the Energy Consents Unit (ECU) and South Ayrshire Council (SAC) as the local

planning authority consider to be the main effects and therefore the topics on which the EIA should focus.

- 2.14 This Report also provides an outline of relevant environmental receptors that may be significantly affected by the Proposed Development and describes the information that is envisaged to be submitted as part of the EIAR. This approach enables consultees with a particular interest to identify whether any potentially significant impacts have been omitted, suggest additional mitigation measures or to comment on the suitability of the intended method of assessment if necessary.
- 2.15 Comments on the scope of the EIA are invited. Should consultees be in a position to identify or provide additional relevant information concerning the existing environment or any specific local issues, this would be welcomed.

3 SITE DESCRIPTION AND DESCRIPTION OF THE PROPOSED DEVELOPMENT

The Site

- 3.1 The proposed Site ("The Site") is located within South Ayrshire Council and consists predominantly of rough grassland ground cover and extensive areas of plantation forestry.
- 3.2 The site lies along an undulating ridge adjacent to the existing Hadyard Hill wind farm. The existing Hadyard Hill wind farm is an operational wind farm (commissioned in 2006) comprising 52 turbines. The site is situated in the Carrick Hills in the south-east of South Ayrshire. It lies to the north of the Stinchar Valley and the south of the Girvan Valley in an upland area comprising low to medium sized hills, where landcover mostly comprises open moorland and coniferous forestry.
- 3.3 The site is located in a Landscape Character Type (LCT) classified as 'Foothills with Forest and Wind Farms' LCT as identified in the South Ayrshire Landscape Wind Capacity Study (LWCS). This combines a subdivision of the broader Foothills with Forest LCT with a subdivision of the Foothills LCT as identified in the original Ayrshire Landscape Character Area study and reflects the change in character through the introduction of the Hadyard Hill Wind Farm. The LCT comprises a mix of improved grassland, unimproved grassland and commercial forestry plantations.
- 3.4 The local area is relatively sparsely populated, with a number of small settlements, hamlets and dispersed individual dwellings. The nearest settlements are (approx.) Barr (4km south), Dailly (4km north), Crosshill (6.5km north), Straiton (7.5km north east) and Maybole (9km north). The nearest town is Girvan, located 10.5km to the west.

The Proposed Development

- 3.5 Energiekontor UK Ltd is investigating the potential for a wind farm development on the Site, consisting of the erection, operation of approximately 16 turbines, each up to a maximum of 180m to 230m in height to blade tip. The principal elements of the Proposed Development are described in further detail below.

Wind Turbines

- 3.6 It is proposed to erect 16 wind turbines on the Site. The turbines would be of a typical modern design comprising a three bladed rotor hub mounted on a rotatable nacelle (containing a gearbox and a generator), tower and foundation.
- 3.7 Final turbine selection would be made following the grant of consent and after a tendering and procurement exercise. The EIA will therefore be undertaken on the basis of feedback from the consultation process and a candidate turbine design consisting of:
- Horizontal axis type with a rotor consisting of three blades, each up to approximately 81.5m in length (giving a total rotor diameter of approximately 163m);
 - Nacelle (cover housing) height of approximately 148.5m;

- Maximum height to vertical blade tip. For the purposes of the Scoping exercise this is based on turbines of up to 230m to tip;
- Turbines would generate power for all wind speeds between 4m/s and 25m/s; and
- At wind speeds greater than 25m/s (gale force) the turbines would shut down for self-protection.

Associated Development

3.8 The principal items of associated development include:

- **Site access** – likely to gain access from B7023 but this will be subject of further study and utilising existing forestry tracks where possible within the Site.
- **Site tracks** – to provide access for construction and maintenance vehicles from the site access to the substation and wind turbines. These would be installed at the commencement of the construction phase. They would have a 5.0m running width with local widening on corners and would be surfaced with coarse aggregate. Depending on localised ground conditions they would either be cut into, or floated on, the ground.
- **Temporary construction compound / storage area** – to provide a secure area for site office facilities and storage of materials and components. To be constructed adjacent to the site track, with an 80m x 40m hardcore base, surrounded by a security fence and locked gates. The fence and gates would be removed at the end of the construction phase and the hardcore base retained but allowed to re-vegetate.
- **Crane hardstandings and outrigger pads** – to provide a level and firm base for the cranes at the location of each turbine. Each would be a maximum of 55m x 25m and surfaced with coarse aggregate.
- **Transformer housings** – the transformers to step up the voltage exported from each turbine (from 690V to 33 kV) would either be placed within the wind turbines themselves, or in a small secure external transformer housing placed next to each wind turbine tower, depending on the final turbine choice.
- **High voltage and control cables** – to form power and control circuits linking each turbine to the on-site substation, cables would be placed in trenches (dimensions to be determined by ground conditions but typically 0.5m wide x 1m deep) routed alongside the tracks.
- **Substation building & Compound** – likely to be a 15m long by 10m wide single storey building, housing the switchgear and control equipment plus secure storage space. A compound measuring 15m x 10m would be located at the rear of the building to house certain elements of the grid control equipment.
- **Energy Storage Compound** – The energy storage equipment would be housed within ISO shipping containers with a 2.4m high palisade fence and contained within a compound. Battery containers will be positioned a minimum of 2.5m apart to facilitate access to all sides. Battery energy storage equipment will be factory assembled and delivered to site in standard 12.2m long x 2.4m wide ISO shipping containers.
- **Off-site highway works** – to facilitate wind turbine component delivery, various off-site highway works would be required along the proposed abnormal delivery route.

- **Borrow pit(s)** - Material for the construction of on-site access tracks would, where possible, be won on site either derived from existing borrow pits, as tracks are constructed or from new borrow pits. This approach would minimise transportation movements of stone to site. The location and design of borrow pits will be defined as part of the EIA process and site design.

Grid Connection

- 3.9 A grid connection would be required to feed the electricity generated by the wind farm into the electricity network for the operational period of the project. The final details of the grid connection, including the precise route and an assessment of any impacts on the environment would be determined by the local Network Operator at a later date. The new grid connection may be subject to a separate design and consent process under Section 37 of the Electricity Act 1989.

Construction Phase

- 3.10 It is estimated that it would take approximately 12 months to construct the Proposed Development. Construction works would include:
- Temporary and permanent highway modifications to enable vehicles to access the Site from the local and strategic highway network;
 - Construction of permanent new site tracks required to access the wind turbine positions. These would be used by civil engineering plant and construction equipment;
 - Construction of a secure site compound / storage area for site office facilities and storage of materials and components;
 - Installation of hardstandings and outrigger pads for the support of the cranes that would be used for the erection of the turbines;
 - Construction of foundations for the support of the turbine structures;
 - Wind turbine delivery and erection;
 - Installation of transformers in separate housings alongside each wind turbine (if required);
 - Installation of on-site High Voltage cabling, communication cabling and earthing;
 - Installation of Supervisory Control and Data Acquisition system;
 - Construction of site substation and compound;
 - Commissioning of site mechanical and electrical equipment; and
 - Reinstatement and landscaping, removal of temporary site offices, reseeded verges and areas around turbine bases.
- 3.11 The construction works would mainly follow the order detailed above but many activities may be carried out concurrently to reduce the overall length of the construction programme. There would be construction phasing, with civil engineering works progressing in some areas of the Site while turbines were being erected elsewhere. In order to minimise disruption to land use, Site restoration would be undertaken as early as possible in development areas.
- 3.12 A detailed programme of works would be produced by the construction contractors prior to the commencement of works on Site.

- 3.13 Should consent be granted it is likely that construction hours would be restricted by means of a condition.
- 3.14 Construction material would typically be transported by road from source or seaport. Large loads such as wind turbine components (rotor blades, tower sections and nacelles) would be transported to the Site by low loader using a designated route.
- 3.15 At this stage the most likely route to the Site from the strategic road network for construction traffic, including abnormal loads, is travelling south from the B7023 via the A77.

4 PLANNING POLICY CONTEXT

Introduction

- 4.1 The proposed Development will be considered under Section 36 (S.36) of the Electricity Act 1989. As part of the S.36 application process, the applicant will request that the Scottish Ministers issue a Direction under s.57(2) of the Town and Country Planning (Scotland) Act 1997 ("the 1997 Act") that deemed planning permission be granted for the proposed development.
- 4.2 In materially considering the Development Plan the test to be applied is not the same as in the case of the Town and Country Planning (Scotland) Act 1997 as amended (the 1997 Act). The test, as set out in Section 25 of the 1997 Act, against the Development Plan is not triggered in the case of a S36 applications. In effect a development being considered under Section 36 of the Electricity Act need not necessarily accord with the Development Plan to be considered acceptable for consent to be granted.
- 4.3 Schedule 9 of the Electricity Act 1989 sets out environmental features which the decision maker must have regard to and identifies that mitigation must be considered. Sub-paragraph 1 is relevant to an applicant if they hold a License at the date the application is submitted. Sub Paragraph 1 states:
- "In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate, transmit, distribute or supply electricity*
- (a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and*
- (b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."*
- 4.4 Sub-paragraph 2 applies to all applicants and refers to sub paragraph 1. Sub-paragraph 2 states:
- "In considering any relevant proposals for which his consent is required under section 36 or 37 of this Act, the Secretary of State shall have regard to —*
- (a) the desirability of the matters mentioned in paragraph (a) of sub-paragraph (1) above; and*
- (b) the extent to which the person by whom the proposals were formulated has complied with his duty under paragraph (b) of that sub-paragraph."*
- 4.5 The planning input to the EIA Report will focus on the relevant development plan, and other material considerations. A separate Planning Statement will not assess the Proposed Development against the relevant planning policy and will consider the balance of effects of the Proposed development as set out in the EIA, in the context of the statutory requirements of the 1989 Electricity Act, Development Plan policy and other material considerations.

4.6 This section sets out the planning policy context that is relevant to the Site and Proposed Development. It includes consideration of:

- National Planning Framework 3;
- Scottish Planning Policy;
- South Ayrshire Local Development Plan; and
- Other material considerations

4.7 We set out each in turn below.

National Planning Framework 3

4.8 National Planning Framework 3 (NPF3) was published on 23 June 2014. NPF3 is a long term strategy for Scotland and is the spatial expression of the Government's Economic Strategy and plans for development and investment in infrastructure. Together, NPF3 and Scottish Planning Policy (SPP) applied at the strategic and local levels are intended to help the planning system deliver the Government's vision and outcomes for Scotland and to contribute to the Government's central purpose.

4.9 The general and high-level support for renewables is provided through the 'vision' which is referred to as inter alia:

- A successful, sustainable place – “we have a growing low carbon economy which provides opportunities...”
- A low carbon place – “we have seized the opportunities arising from our ambition to be a world leader in low carbon generation, both onshore and offshore...”
- A natural resilient place – “natural and cultural assets are respected, they are improving in condition and represent a sustainable economic, environmental and social resource for the nation...”

4.10 Further support is provided in Chapter 3 'A Low Carbon Place' which sets out the role that planning will play in delivering the commitments set out in 'Low Carbon Scotland: The Scottish Government's Proposals and Policies'. It states:

“the priorities identified in this spatial strategy set a clear direction of travel which is consistent with our world leading climate legislation.”

4.11 The introduction to Chapter 3 states that the Government's ambition “is to achieve at least an 80% reduction of greenhouse gas emissions by 2020”.

4.12 The introductory section acknowledges that, at present, the energy sector accounts for a significant share of the country's greenhouse gas emissions. To address this, Scotland needs to employ skills and innovation to help capitalise on our outstanding natural advantages. A planned approach to development has ensured that onshore wind development has widely avoided internationally and nationally protected areas.

4.13 Paragraph 3.7 states that whilst there is strong public support for wind energy as part of the renewable energy mix, opinions about onshore wind in particular locations can vary. It adds that the technology is “...recognised as an opportunity to improve the long-term resilience of rural communities.”

- 4.14 Paragraph 3.8 makes reference to targets and states that by 2020, the aim is to reduce total energy demand by 12%. In order to achieve this, and to maintain energy supplies, further diversification of supplies will be required.
- 4.15 It adds that the Government's aim is to meet at least 30% of overall energy demand from renewables by 2020 – this includes generating the equivalent of at least 100% of gross consumption from renewables with an interim target of 50 by 2015.
- 4.16 Paragraph 3.9 states:
- “Our Electricity Policy Statement sets out how our energy targets will be met. We are making good progress in diversifying Scotland's energy generation capacity, and lowering the carbon emissions associated with it, but more action is needed. Maintaining security of supplies and addressing fuel poverty remain key objectives. We want to continue to capitalise on our wind resource and for Scotland to be a world leader of offshore renewable energy. In time we expect the pace of onshore wind energy development to be overtaken by a growing focus on our significant marine energy opportunities including wind, wave and tidal energy.”*
- 4.17 Overall it is clear that onshore wind development is recognised as a key technology in the energy mix which will contribute to Scotland becoming 'a low carbon place' which in turn will be a key part of the 'Vision' for Scotland (as set out at paragraph 1.2 of the NPF3). Furthermore, the Government has made it unequivocally clear that it wants to continue to “capitalise on our wind resource”. The Proposed Development would contribute to the unmet 2020 target set out in NPF3.

Scottish Planning Policy

- 4.18 On 23 June 2014, the Scottish Ministers published 'Scottish Planning Policy' (SPP). The purpose of SPP is to set out national planning policies which reflect Scottish Government Minister's priorities for the operation of the planning system and for the development and use of land. SPP is a statement of Scottish Government policy on how nationally important land use planning matters should be addressed.
- 4.19 Paragraph (iii) states that as a statement of Ministers' priorities, the content of SPP is a material consideration that carries significant weight, although it is for the decision maker to determine the appropriate weight to be afforded to it in each case.
- 4.20 Paragraph 13 of SPP introduces four planning outcomes which explain “how planning should support the vision” for the planning system in Scotland. Three of these outcomes are particularly relevant, namely:
- Outcome 1: a successful sustainable place – supporting sustainable economic growth and the creation of well designed, sustainable places;
 - Outcome 2: a low carbon place – reducing our carbon emissions and adapting to climate change; and
 - Outcome 3: a natural, resilient place – helping to protect and enhance our natural and cultural assets and facilitating their sustainable use.

4.21 Outcome 2 'A Low Carbon Place' explains that NPF3 will facilitate the transition to a low carbon economy, particularly by supporting diversification of the energy sector. Paragraph 18 makes reference to the Climate Change (Scotland) Act 2009 which has set a target of reducing greenhouse gas emissions by at least 80% by 2050, with an interim target of reducing emissions by at least 42% by 2020. SPP explains that Section 44 of the 2009 Act places a duty on public bodies to act in the best way to contribute to the delivery of emissions targets as set out in the Act, and to help deliver the Scottish Government's climate change adaptation programme.

4.22 SPP contains two Principal Policies - 'sustainability' and 'placemaking'. Sustainability is addressed at page 9. The SPP states at paragraph 24 that:

"the Scottish Government's central purpose is to focus government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth."

4.23 Paragraph 25 adds that the Scottish Government's commitment to the concept of sustainable development is reflected in its Purpose.

4.24 Paragraph 27 cross refers to the Government's Economic Strategy which it states *"indicates that sustainable economic growth is the key to unlocking Scotland's potential ... and to achieving a low carbon economy..."* It also makes reference to the need to maintain a high-quality environment and to pass on *"a sustainable legacy for future generations"*.

4.25 A key 'Policy Principle' in SPP is the following statement set out at paragraph 27:

"This SPP introduces a presumption in favour of development that contributes to sustainable development".

4.26 Paragraph 28 continues:

"the planning system should support economically, environmentally and socially sustainable places by enabling development that balances the costs and benefits of a proposal over the longer term. The aim is to achieve the right development in the right place; it is not to allow development at any cost."

4.27 Paragraph 29 of SPP sets out that policies and decisions should be guided by a number of principles. Those of relevance include:

- Giving due weight to net economic benefit;
- Supporting good design;
- Supporting delivery of infrastructure, for example ... energy;
- Supporting climate change mitigation and adaptation including taking account of flood risk;
- Having regard to the principles for sustainable land use as set out in the Land Use Strategy;
- Protecting, enhancing and promoting access to cultural heritage, including the historic environment;

- Protecting, enhancing and promoting access to natural heritage including ... landscape and the wider environment; and
- Protecting the amenity of new and existing development and considering the implications of development for water, air and soil quality.

4.28 The introduction of the presumption in favour of development that contributes to sustainable development has important consequences for development management practice. Paragraphs 32 and 33 of SPP explain how this Policy Principle is given effect in development management.

4.29 Paragraph 32 states that the “presumption in favour of sustainable development does not change the statutory status of the development plan as the starting point for decision-making”. SPP directs decision makers as follows:

“proposals that accord with up-to-date plans should be considered acceptable in principle and consideration should focus on the detailed matters arising...”

4.30 Paragraph 33 adds:

“Where relevant policies in a development plan are out-of-date or the plan does not contain policies relevant to the proposal, then the presumption in favour of development that contributes to sustainable development will be a significant material consideration. Decision-makers should also take into account any adverse impacts which would significantly and demonstrably outweigh the benefits when assessed against the wider policies in this SPP. The same principle should be applied where a development plan is more than five years old.”

4.31 SPP addresses ‘A Low Carbon Place’ as a ‘subject policy’ on page 36 and refers to ‘delivering electricity’. Paragraph 152 refers to the NPF context and states that NPF3 is clear that planning must facilitate the transition to a low carbon economy and help to deliver the aims of the Scottish Government. It is stated that Scotland has significant renewable energy resources, both onshore and offshore.

4.32 Paragraph 153 states that terrestrial planning ‘facilitates’ development of renewable energy technologies and guides new infrastructure to appropriate locations. It adds that “efficient supply of low carbon and ... generation of ... electricity from renewable energy sources are vital to reducing greenhouse gas emissions...” It explains that renewable energy also presents a significant opportunity for associated development, investment and growth of the related supply chain.

4.33 In terms of ‘Policy Principles’, paragraph 154 sets out that the planning system should:

- Support the transformational change to a low carbon economy, consistent with national objectives and targets, including deriving:
- 30% of overall energy demand from renewable sources by 2020;
- The equivalent of 100% of electricity demand from renewable sources by 2020;
- Support the development of a diverse range of electricity generation from renewable energy technologies – including the expansion of renewable energy generation capacity; and

- Guide developments to appropriate locations and advise on the issues that will be taken into account when specific proposals are being assessed.

- 4.34 Onshore wind is specifically addressed at Paragraph 16,1 *et seq.* of SPP. Detailed guidance is provided for planning authorities with regard to the preparation of spatial frameworks for onshore wind development, and it makes it clear that proposals for onshore wind turbine development should continue to be determined whilst spatial frameworks and local policies are being prepared and updated.
- 4.35 In terms of spatial framework guidance, a 'community separation for consideration of visual impact' is set out as 'an area not exceeding 2km around cities, towns and villages identified on the local development plan with an identified settlement envelope or edge'.
- 4.36 As with the previous SPP, this separation distance has the purpose of guiding the preparation of Spatial Frameworks and does not impose any requirement for a 'set back' to settlements or in relation to individual properties for wind farms in terms of development management.
- 4.37 Table 1.1: *Spatial Frameworks* of SPP (as replicated below) identifies three separate 'Groups' to help local planning authorities develop spatial frameworks for encouraging wind farm development. These are 'areas where wind farms will not be acceptable' (Group 1), 'areas of significant protection' (Group 2) and 'areas with potential for wind farm development' (Group 3).

Table 4.1 – Spatial Frameworks

Group 1: Areas where wind farms will not be acceptable: National Parks and National Scenic Areas.		
Group 2: Areas of significant protection: Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.		
National and international designations: • World Heritage Sites; • Natura 2000 and Ramsar sites; • Sites of Special Scientific Interest; • National Nature Reserves; • Sites identified in the Inventory of Gardens and Designed Landscapes; • Sites identified in the Inventory of Historic Battlefields.	Other nationally important mapped environmental interests: • areas of wild land as shown on the 2014 SNH map of wild land areas; • carbon rich soils, deep peat and priority peatland habitat.	Community separation for consideration of visual impact: • an area not exceeding 2km around cities, towns and villages identified on the local development plan with an identified settlement envelope or edge. The extent of the area will be determined by the planning authority based on landform and other features which restrict views out from the settlement.
Group 3: Areas with potential for wind farm development: Beyond groups 1 and 2, wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.		

- 4.38 In terms of development management, paragraph 169 of SPP sets out that "proposals for energy infrastructure developments should always take account of spatial frameworks for

wind farms" and that considerations will vary relative to the scale of the proposal and characteristics of the area but are likely to include a number of matters, including:

- Net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities;
- The scale of contribution to renewable energy generation targets;
- Effect on greenhouse gas emissions;
- Cumulative impacts – planning authorities should be clear about the likely cumulative impacts arising from all of the considerations below;
- Impacts on communities and individual dwellings, including visual impact, residential amenity, noise and shadow flicker;
- Landscape and visual impacts, including effects on wild land;
- Effects on the natural heritage, including birds;
- Impacts on carbon rich soils, using the carbon calculator;
- Public access, including impact on long distance walking and cycling routes and scenic routes identified in the NPF;
- Impacts on the historic environment, including scheduled monuments, listed buildings and their settings;
- Impacts on tourism and recreation;
- Impacts on aviation and defence interests and seismological recording;
- Impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised;
- Impacts on road traffic;
- Impacts on adjacent trunk roads;
- Effects on hydrology, the water environment and flood risk;
- The need for conditions relating to the decommissioning of developments, including ancillary infrastructure, and site restoration;
- Opportunities for energy storage; and
- The need for a robust planning obligation to ensure that operators achieve site restoration.

4.39 Paragraph 170 of SPP sets out that areas identified with wind farms should be suitable for use in perpetuity. It further adds that consent may be time limited, but nevertheless wind farms should be sited and designed to ensure impacts are minimised and to protect an acceptable level of amenity for adjacent communities.

Local Planning Policy Context

4.40 This section sets out the planning policy context that is relevant to the Site and Proposed Development.

4.41 The South Ayrshire Local Development Plan was adopted in September 2014 (the SALDP). The Development Plan is therefore more than 5 years old and, on this basis, the proposed Development benefits from the full application of the presumption in favour of sustainable development as set out within SPP.

- 4.42 The Wind Energy Policy is the most relevant SALDP Policy for the proposed Development. The SALDP Wind Energy Policy states:

"We will support proposals if:

a. they are capable of being accommodated in the landscape in a manner which respects its main features and character (as identified in the South Ayrshire Landscape Wind Capacity Study or in any subsequent updates to that study), and which keeps their effect on the landscape and the wider area to a minimum (through a careful choice of site, layout and overall design);

b. they do not have a significant detrimental visual impact, taking into account views experienced from surrounding residential properties and settlements, public roads and paths, significant public viewpoints, and important recreational assets and tourist attractions;

c. they do not have any other significant detrimental effect on the amenity of nearby residents, including from noise and shadow flicker;

d. they do not have a significant detrimental effect on natural heritage features, including protected habitats and species, and taking into account the criteria in LDP policy: natural heritage;

e. they do not have a significant detrimental effect on the historic environment, taking into account the criteria in LDP policy: historic environment and LDP policy: archaeology;

f. they do not adversely affect aviation, defence interests and broadcasting installations; and;

g. their cumulative impact in combination with other existing and approved wind energy developments, and those for which applications for approval have already been submitted, is acceptable. We will produce supplementary guidance on wind farms, which will identify preferred areas of search, areas with potential constraints and areas requiring significant protection; and will provide more detail on how the above-mentioned criteria will be applied in assessing all proposals for wind farms and turbines. We will use the South Ayrshire Landscape Wind Capacity Study (or any subsequent updates to that study) to help us decide the effect of proposals on the landscape. Development proposals will not be permitted where, either individually or cumulatively, they would adversely affect the integrity of a Natura 2000 site."

- 4.43 The wind energy policy is generally supportive of windfarm development subject to the satisfaction of specified criteria.

- 4.44 The following policies of the SALDP are also considered to be relevant to the proposed Development:

- LDP Policy: Renewable Energy;
- LDP Policy: Landscape Quality;
- LDP Policy: Protecting the Landscape;
- LDP Policy: Woodland and Forestry;
- LDP Policy: Preserving Trees;

- LDP Policy: Historic Environment;
- LDP Policy: Archaeology;
- LDP Policy: Natural Heritage;
- LDP Policy: Land use and Transport;
- LDP Policy: Outdoor Public Access and Core Paths;
- LDP Policy: Water Environment;
- LDP Policy: Air, Noise and Light Pollution; and
- LDF Policy: Dark Skies.

Supplementary Guidance: Wind Energy

- 4.45 South Ayrshire Council's (SAC) Supplementary Guidance on Wind Energy, along with the SALDP establishes the policy framework and the basis upon which all wind energy proposals within South Ayrshire are to be considered. The guidance is designed to set out a spatial strategy for wind energy in South Ayrshire in line with requirements set out in Scottish Planning Policy (SPP) 2014.
- 4.46 The Spatial Framework combines four layers of information to determine those 'Areas of Significant Protection' in relation to wind farm development, which are:
- 2km buffers around settlements;
 - National and international designations;
 - Wild Land Areas (WLAs); and
 - Carbon rich soils, deep peat and priority peatland habitat.
- 4.47 The site lies outwith all 2 km settlement buffers, national and international designations and Wild Land Areas, none of the settlement buffers, national and international designations and WLAs apply to the site and therefore it is considered as a Group 3 Site in accordance with SPP (Table 1.1 above) as an 'Area with potential for wind farm development'.

Proposed Replacement South Ayrshire Local Development Plan (PLDP2)

- 4.48 On 27 June 2019, the Council approved PLDP2 and associated Environmental Report and draft Supplementary Guidance for publication and public consultation and agreed that, on publication, PLDP2 would become a material consideration in determining planning applications, with the weight accorded to it increasing as it progresses through the statutory process. In this case, the emerging (and adopted) development plan remains a material consideration for Section 36 applications, but as it is well advanced, its importance is increased. Whilst its relative weight in the assessment of Section 36 projects is limited, it is an indicator of the Council's settled position on the direction of future development and planning policy in South Ayrshire. Energiekontor will consider the applicable (draft or otherwise) policies in PLDP2 as part of the Section 36 submission.

Q1: Confirmation is sought that the identified development plan policies are appropriate.

Q2: Are there any further policies which would be considered likely to be material to the determination of the application?

5 SCOPE OF THE EIA

Introduction

5.1 Regulation 4(2) of the EIA Regulations:

"The EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on the following factors:

- a. *Population and human health;*
- b. *Biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC(a) and Directive 2009/147/EC(B);*
- c. *Material assets, cultural heritage and the landscape;*
- d. *The interaction between the factors referred to in sub-paragraph (a) to (d).."*

5.2 Regulation 4(3) requires that these factors must include the operational effects of the proposed development where the proposed development will have operational effects.

5.3 Based on this guidance, experience of similar projects elsewhere and consultation with specialist advisors and consultees, we consider the Schedule 3 selection criteria below in the context of Schedule 4 to define the broad scope of the EIA.

i) Landscape and Visual Amenity

5.4 The objective of the Landscape and Visual Impact Assessment (LVIA) will be to assess the Proposed Development in relation to the following:

- Landscape Effects: Assessment of the effects on areas of landscape character including key characteristics, elements, landscape qualities and landscape designations;
- Visual Effects: Assessment of the effects on the views and visual amenity experienced by residents, tourists/visitors, recreational users and road users; and
- Night time visual effects as a consequence of the Civil Aviation Authority (CAA) requirement for visible lighting to be fitted to obstacles at or above 150m in height.

5.5 The LVIA process will incorporate the following stages:

- Baseline data collection and analysis;
- Description of the baseline landscape and visual resource (including landscape features and characteristics, as well as key visual receptors and baseline darkness conditions;
- Design development and consideration of mitigation measures;

- Identification of potential residual impacts on the landscape and views (taking into consideration proposed mitigation measures);
- Evaluation of the significance of impacts on landscape (elements, key characteristics and overall character) and visual amenity, including night-time and dark skies amenity. This will include identification of the varying sensitivity of the individual landscape and visual receptors to the proposed development; and
- Presentation of the findings in the ES (including supporting plans and visualisations).

Study Area

- 5.6 With reference to the Visual Representation of Wind Farms, Version 2.2 (Scottish Natural Heritage, 2017), based on the preliminary turbine height of up to 230m to blade tip, an initial study area of up to 45 km should be considered for the purposes of establishing a preliminary evaluation of the likely receptors. However, the preliminary ZTV (Figure 3) which accompanies this Scoping Report illustrates that visibility would be very limited at distances greater than 20 km and we therefore propose limiting the detailed study area to a 20km radius from the proposed turbines.
- 5.7 Within the Study Area, the LVIA will focus upon the areas closest to the Proposed Development, within an approximate 20 km radius of the proposed turbines, where potential significant effects are more likely to occur.
- 5.8 The cumulative effect of the Proposed Development in association with other wind energy developments will also be considered. The search area for cumulative development will extend up to a 60km radius from the proposed turbines, although a detailed study area of 40km is proposed for the assessment. The Cumulative LVIA (CLVIA) will focus upon the cumulative developments which, in association with the Proposed Development, are more likely to result in significant cumulative effects.

Baseline

- 5.9 Initial studies have been undertaken to identify the potential landscape and visual receptors to be considered within the LVIA and the viewpoint locations to inform the assessment (22 proposed viewpoints are set out below). This is based on the initial ZTV illustrating the proposed 45 km study area and knowledge of the area surrounding the Site.
- 5.10 The key receptors are listed in the following text. For the final LVIA detailed baseline information on the landscape and visual resource will be gathered through a combination of desk-studies, consultation and field surveys.

Landscape Character

- 5.11 The 'Updated' Landscape Wind Capacity Study (LWCS) was produced in 2018 by Carol Anderson Associates and updates the 2013 LWCS for South Ayrshire. It sets out development guidelines for each Landscape Character Type (LCT) in South Ayrshire and has been adopted as Supplementary Planning Guidance (SPG). The Landscape is defined as 'Foothills with Forest and Wind Farm' which combines a sub division of the broader Foothills with Forest LCT with a sub division of the Foothills LCT as identified in the original Ayrshire Landscape Character Assessment and reflects the change in character that has occurred through the introduction of the Hadyard Hill Wind Farm. The LWCS describes the host landscape as follows;

'Although the large scale and simple landform and land cover of these uplands could relate in principle to larger turbine typologies, the narrowness of parts of this landscape and its proximity to the well settled Stinchar and Girvan valleys and the sensitive Rugged Hills, Lochs and Forest (21) are key constraints especially to very large turbines.'

- 5.12 The Foothills with Forest and Wind Farms LCT comprise a group of medium sized hills which form a north-east to south-west ridge with an internal, gently undulating upland plateau. The hills are rounded and covered either by open grassland or blocks of commercial forestry. They are made distinct by the presence of the 52 turbines of Hadyard Hill Wind Farm, which occupy much of the upland plateau.
- 5.13 To the north of the Foothills with Forest and Wind Farms LCT lies the Middle Dale LCT of the Girvan Water. This gently undulating valley landscape is enclosed by low hills to the north and south. It is a settled landscape, characterised by a mix of mature woodland and small scale fields of pasture. Historic Estates, such as Bargany and Kilkerran, occupy parts of the valley, and their gardens and designed landscapes add to the rural character.
- 5.14 To the south of the Foothills with Forest and Wind Farms LCT lies the Intimate Pastoral Valley LCT of the River Stinchar. This is a narrower valley with a greater sense of enclosure from the hills to the north and south. Small fields of pasture extend onto the lower slopes from the narrow valley floor and mature woodland and hedgerows form a pattern of enclosure. Dispersed properties are mainly concentrated along the minor road, follow a distinctly linear pattern through the valley.
- 5.15 To the west of the Foothills with Forest and Wind Farms LCT lies the Coastal Foothills LCT. While these hills are not especially high, they are prominent, largely owing to their contrast with the lower-lying coast to the west and valley to the east. Across the higher ground, the predominance of rough grasses and broad enclosures, gives the landscape a sense of openness, simplicity and exposure, which acts in contrast to the smaller scale and intimate landscapes of the neighbouring valleys.
- 5.16 To the south of the Intimate Pastoral Valley LCT of the River Stinchar, lies the Rugged Uplands LCT of Carrick Forest. The character of this landscape is characterised by hills which are more elevated and less rounded than the foothills and considered rugged on account of the degree of exposed rock and more uneven landform. Large forest blocks tend to cover the lower and middle hill slopes, modifying the character of what would otherwise be open moorland with rough grasses. Small lochs and lochans occur, which add visual interest to this upland landscape.
- 5.17 Despite the existing influence of wind farm development in the Foothills with Forest and Wind Farm LCT, the LWCS highlights the potentially significant effects that would be likely to arise on the smaller scale valley landscapes to the north and south, especially if the turbines were to encroach onto the peripheral hills which mark the transition from foothills into valley. The LCWS also highlights the sensitivity of the Rugged Uplands LCT to the south-east, suggesting this landscape has remote and unmodified characteristics.

Landscape Designations

- 5.18 The site is not covered by any statutorily or nationally protected landscape-based planning designations that would protect the quality or scenic value of the landscape. There is, however, a Regional Scenic Area designation covering the site and much of the southern half of the 20km study area. Landscape designations are shown on Figure 5.

National Scenic Areas

- 5.19 National Scenic Areas (NSAs) are areas of land considered to be important on a national level. Paragraph 212 of Scottish Planning Policy (SPP) (Scottish Government, 2014) states that:

"Proposed Development that affects a National Park, National Scenic Area, Site of Special Scientific Interest or a National Nature Reserve should only be permitted where:

- the objectives of designation and the overall integrity of the area will not be compromised; or
- any significant adverse effects on the qualities for which the area has been designated are clearly outweighed by social, environmental or economic benefits of national importance."

- 5.20 There are no NSAs in the 20km study area denoting the absence of nationally important scenic landscapes.

Gardens and Designed Landscapes

- 5.21 Gardens and Designed Landscapes (GDLs) are described in paragraph 133 of SPP (Scottish Government, 2014) as follows:

"Planning authorities should protect and, where appropriate, seek to enhance gardens and designed landscapes included in the Inventory of Gardens and Designed Landscapes and designed landscapes of regional and local importance."

- 5.22 Historic Environment Scotland is responsible for designating Gardens and Designed Landscapes (GDLs), which are contained in an Inventory which can be accessed at <http://www.historic-scotland.gov.uk/gardens>. The descriptions contained in the Inventory identify the special qualities which merit the designation of each GDL.

- 5.23 There are six Inventory Gardens and Designed Landscapes in the study area as shown on Figure 5. While the majority of the GDLs are either too distant or too enclosed by landform and mature tree cover, Bargany and Kilkerran are two with potential to undergo significant effects. Both located to the north-west of the proposed development, the proposed turbines would affect views from parts of Bargany grounds, and the setting of Kilkerran.

Scenic Areas

- 5.24 Scenic Areas (SAs) are areas of land designated for their importance at the regional level, by South Ayrshire Council. They are protected through Development Plan Policy. In reference to protecting the landscape, the South Ayrshire Local Development Plan states:

"We will consider proposals within or next to Scenic Areas (as defined on the LDP environment map) against the following conditions.

a. The significance of impacts and cumulative impacts on the environment, particularly landscape and visual effects as informed by the Ayrshire Landscape Character Assessment (SNH 1998)".

b. How far they would benefit the economy.

c. Whether they can be justified in a rural location."

- 5.25 There are no detailed citations for the South Ayrshire SAs although their basis is referenced in the Local Development Plan as being the 'Ayrshire Landscape Assessment'. There are two SAs in the study area; Carrick Hills, and South Ayrshire. The site is located in Carrick Hills SA, where the proposed development has potential to give rise to significant effects.

Wild Land Areas

- 5.26 There are only three WLAs to the south of the Highland Boundary Faultline and only one partly within the 20km radius of the proposed development, namely Merrick WLA. This is located to the south-east of the study area, at a range of approximately 8km from the proposed development and covering a large part of the Galloway Hills. While there is already an influence on the WLA from existing Hadyard Hill, Dersaloch, Arecleoch, Kilgallioch, Mark Hill and Tralorg wind farms, the cumulative effect of the proposed development will be assessed as part of the EIAR.
- 5.27 As the proposed development is located outside the WLA, it would not be possible for it to give rise to direct effects on the wildness qualities of the WLA. It may, however, have adverse effects on how these qualities are experienced from within the WLA and this will be evaluated in the context of the existing influence from baseline wind farms noted above. The cumulative effect on wildness qualities will also be evaluated as part of the EIAR.
- 5.28 A review of landscape-related planning designations indicates that the development has the potential to have a significant effect on the Carrick Hills Scenic Area in which the site is located and potentially on Bargany and Kilkerran GDLs and Merrick WLA. While Energiekontor consider that there is sufficient separation distance between the proposed development and Merrick WLA, (where there is already an influence on the character of the WLA from the existing wind farms), a significant cumulative effect could potentially arise and this will be assessed as part of any future proposal.

Visual Receptors

- 5.29 There are a number of principal visual receptors which represent people who may be living in settlements, travelling along roads, railways or paths or visiting attractions in the study area.
- 5.30 The landscape to the south and east of the study area is predominantly upland with few principal visual receptors other than the main and minor roads and small settlements located in the valleys, as well as the hill summits within the Merrick range enjoyed predominantly by walkers. Across the lower lying landscape to the north of the study area there is a concentration of principal visual receptors in the form of small and medium settlements and roads, especially along the coast towards Ayr.
- 5.31 The principal visual receptors in close proximity to the proposed development which have the greatest potential for significant effects to arise, include the small settlements, communities and roads in the Water of Girvan Valley to the north and River Stinchar Valley to the south and the minor roads across the foothills where the proposed development would be located.
- 5.32 The key visual receptors in the surrounding area include:

Settlements

- 5.33 The proposed development lies within an area of foothills where settlement is sparse and limited to isolated farmsteads or properties set on the middle or lower hill slopes. Although still rural in character and small in scale, settlement occurs more commonly in the surrounding river valleys. Within the wider study area, settlement occurs mainly in the lower lying areas to the north and west with a concentration occurring along the coast. To the east and south the combination of elevated landform and extensive forestry means that here settlement is typically sparse and isolated.

Roads

- 5.34 The location and extent of roads reflects the topography of the area, with main routes concentrated across the lowland landscapes to the north and following the coast from north to south. In the upland landscapes to the east and south, the roads follow the river valleys, while minor roads cut across the lower foothills. The closest roads to the proposed development include the B734, B741, NCR 7 Glentrool to Crosshill minor road and Barr to Balloch minor road.

Railways

- 5.35 Two railway lines pass through the study area; one from Glasgow to Stranraer and the other from Glasgow to Carlisle. The Glasgow to Stranraer line passes north to south through the study area, with stations at Maybole and Girvan and coming within 10km of the proposed development. The Glasgow to Carlisle line passes through the north east edge of the study area at a distance beyond 30km of the proposed development.

Long distance routes and Core Paths

- 5.36 National Cycle Route 7 (NCR7) is the only cycle route in the study area. It connects Sunderland to Inverness, with the section through the study area extending from Newton Stewart to Troon via Maybole and Ayr. At its closest it comes within very close proximity of the proposed development, following the minor road between South Balloch and Crosshill.
- 5.37 There are a number of long distance footpaths in the study area including the Southern Upland Way and the Ayrshire Coastal Path. Both these paths are too distant to be significantly affected.
- 5.38 The South Ayrshire Council Core Paths Plan shows a network of paths across the study area. Those of most relevance to the assessment occur within the first 10km radius of the proposed Development.

Attractions and Visitor Facilities

- 5.39 There are a number of attractions and facilities available for visitors across the study area, reflecting the interest of both the natural and built environment. There are a number of country estates which are open to the public, the most prestigious being Culzean Castle which sits on the coast to the north of Turnberry, but also with Blairquhan, Kilkerran and Bargany estates which are located in the Girvan valley to the north of the proposed development.
- 5.40 The Coastal Links at Turnberry and Troon are home to world famous championship golf courses while many more courses occur intermittently across the study area, the closest

being Brunston Castle Golf Course to the north of the proposed development. The influence of Robert Burns is evident in this area with Johnnie Souter's Cottage located in Kirkoswald and the Robert Burns Birthplace Museum located in Ayr.

General visibility of the Proposed Development

- 5.41 The ZTV (Figure 3) shows how the landform influences the pattern of theoretical visibility across the 20km study area. The pattern shows a concentration of theoretical visibility within the immediate surrounding area and then a more fragmented pattern beyond.
- 5.42 The 16 proposed wind turbines would cover a significant area of land to the east of the operational Hadyard Hill Wind Farm. From landscape and visual receptors to the north-west, west and south-west, the proposed development would largely be seen to the rear of the operational Hadyard Hill development. From landscape and visual receptors to the north and south, the horizontal spread of the proposed development would be seen. From receptors to the east, the proposed development would be seen in concentrated extents, and seen as the closest range part of the overall development in conjunction with Hadyard Hill Wind Farm.
- 5.43 Visibility would occur across the upland plateau where the proposed development would be located and where the operational Hadyard Hill already exists. The levels of visibility would be highly variable owing to the horizontal spread of the turbines, combined with the variable elevation of the landform. This means that seldom would all the proposed turbines be visible from any one point.
- 5.44 On the north facing slopes of the Middle Dale LCT to the north of the proposed development, there would be lower levels of visibility of the proposed development, due to the screening effect of the enclosing ridge of hills, including Maxwellston Hill (314m AOD), Hadyard Hill (324m AOD) and Barony Hill (319m AOD). On the south facing slopes, on the opposite side of the valley, visibility would gradually increase with elevation, although actual visibility would often be precluded by the screening effect of tree cover. Theoretical visibility across the broader part of the Middle Dale LCT to the north, would be almost continuous albeit showing low levels of visibility, then a band of higher level of visibility, extending across the South Carrick Hills and over the flatter coastal landscapes towards Ayr. Here, the extent of built form as well as tree cover, will reduce the extent of actual visibility.
- 5.45 To the south, although variable in terms of levels, theoretical visibility would occur almost continuously up to the high ridge that runs through the Plateau Moorland LCT and Rugged Uplands LCT from Garleffin Hill (228m AOD) in the south-west through Cairn Hill (479m AOD) to Eldrick Hill (486m AOD) in the north-east. Actual visibility across this area is greatly reduced by the broad extent of forest cover. To the south of this ridgeline, visibility is very limited with only small patches occurring along the series of summits which extend north from the Merrick (843m AOD) to Cornish Hill (467m AOD) and further south-east along the ridge of the Rhinns of Kells.
- 5.46 To the south-west, a patch of visibility occurs across the Plateau Moorlands LCT where Arecleoch Wind Farm is located and occurs as a result of the intervening hills being marginally lower than those to the south and south-east.
- 5.47 To the east, theoretical visibility occurs almost continuously up to Garleffin Fell (429m AOD) and Glenalla Fell (425m AOD), although actual visibility will be reduced by the extent for forest cover. Beyond these hills, visibility becomes dissipated with smaller patches of lower

levels of visibility localised on the higher west facing slopes and summits of hills. Again actual visibility will be further reduced by the extent of forest cover.

- 5.48 Visibility extends up to the first ridgeline of the Coastal Foothills LCT to the west which runs through Saugh Hill (293m AOD) and Laggan Hill (269m AOD). Beyond this it occurs as patches centred on the higher east facing slopes and summits. Beyond 10km to the east, the study area covers a large part of the Irish Sea where there are few visual receptors and while to the north-east, visibility is shown being of a high proportion of the turbines, to the south-east it is shown as being of a lower proportion.

Potential Landscape and Visual Effects

- 5.49 The landscape assessment will consider effects upon landscape character, landscape designations and landscape fabric. The visual assessment will consider the effects on residents in individual dwellings and settlements, road and railway users, and recreational receptors incorporating a focus on the surrounding landscape. The visual effects arising from visible aviation lighting will also be assessed, where required.
- 5.50 Predicted changes in both the physical landscape and landscape character will be identified. Effects will be considered in terms of the magnitude and type of change to the landscape, including its key characteristics as set out in published landscape character assessments. The sensitivity of the landscape will also be taken into account, acknowledging value placed on the landscape through designation, and the presence of other consented and operational wind farms. The magnitude of the effect will be assessed in terms of the size and scale, geographical extent, duration and reversibility of the effect. These aspects will all be considered, to form a judgement regarding the overall significance of effect.
- 5.51 Visual effects are experienced by people at different locations around the study area, at static locations (for example settlements or viewpoints) and from sequential locations when travelling along routes. Visual receptors are the people who will be affected by changes in views at these places, and they are usually grouped by what they are doing at those places (for example residents, motorists, recreational users etc.). Assessment of the visual effects of the Proposed Development will be based on analysis of the ZTVs, field studies and assessment of representative viewpoints.
- 5.52 A bespoke methodology will be applied to the assessment of visual effects that may arise from visible aviation lighting, to meet CAA requirements. This will identify the extent of the theoretical visibility from the lights and of the intensity of light that may be perceived from different geographical areas
- 5.53 In all cases the level of impact and the resultant 'significance' of the Proposed Development on the baseline resource will be based upon the correlation between the magnitude of change (i.e. Substantial, Moderate, Slight, Negligible, or None) and the sensitivity of the receptor (i.e. High, Medium, or Low). This is summarised in the Table below.

	Magnitude of Change				
		Substantial	Moderate	Slight	Negligible
	High	Major	Major/ moderate	Moderate	Minor
	Medium	Major/ moderate	Moderate	Moderate/ minor	Minor/ negligible
	Low	Moderate	Moderate/ minor	Minor	Negligible

- 5.54 Where the landscape or visual effect is classified as 'Major' or 'Major/Moderate' will be considered to be 'significant'. In addition, where 'Moderate' effects are predicted, professional judgement will be applied to ensure that the potential for significant effects arising has been thoroughly considered.
- 5.55 The LVIA will be supported by illustrative material, including maps, wireframes and photomontages from key viewpoints. Night time photomontages will be generated for a limited number of viewpoints to appraise night time effects from visible lighting attached to the turbines. The assessment will be logically set out to maximise its transparency and ensure that conclusions are readily traceable.

ZTV and Viewpoint Analysis

- 5.56 Assessment of the landscape and visual effects of the Proposed Development will be based on preliminary analysis of the ZTV and viewpoint visualisations. The viewpoint visualisations will incorporate wireframes and photomontages and will be used to consider and illustrate changes to existing views. They will be prepared in accordance with the 2017 SNH Guidance 'Visual Representation of Wind Farms, Version 2.2'. Photographs will be taken using a 50mm lens recommended as best practice by the Landscape Institute and SNH. Night-time photomontages will be based on photography taken 30 minutes after sunset, which is the point at which any aviation lighting is required to switch on.
- 5.57 An initial study area of 45km from the outermost turbines of the Proposed Development is proposed, as recommended by SNH in their guidance¹. A Zone of Theoretical Visibility (ZTV) up to 20km from the Proposed Development is shown in Figure 3 illustrating the potential visibility of the Proposed Development across the Detailed Study Area. This indicates there would be a reduction in theoretical visibility beyond 20km. The LVIA will therefore be focussed within 20km and identify the likely significant landscape and visual effects of the Proposed Development. In summary, visibility of the proposed development is largely concentrated within the first 10km radius, with patches extending out into the 20km radius areas. More distant visibility does extend in a band to the north, where the

¹ SNH (2017) Visual Representation of Wind Farms, Version 2.2, December 2017.

land is lower-lying, and to the south-west where there are no big hills to screen visibility. Conversely, there is little visibility beyond the 5-10km radius to the east and south because the bigger hills which sit behind the Foothills with Forest and Wind Farms LCT, would screen visibility.

- 5.58 There are six Inventory Gardens and Designed Landscapes in the study area as shown on Figure 5. While the majority of the GDLs are either too distant or too enclosed by landform and mature tree cover, Bargany and Kilkerran are two with potential to undergo significant effects. Both located to the north-west of the proposed development, the proposed turbines would affect views from parts of Bargany grounds, and the setting of Kilkerran.
- 5.59 As the proposed development is located well outwith the WLA, it would not give rise to any direct impacts on the wildness qualities within the WLA. It may however, have adverse effects on the perception of these qualities from within the WLA as established through the SNH citation for the WLA and this will be assessed in the LVIA. There is an existing influence from operational windfarms located outside the WLA and the assessment of the Proposed Development will be undertaken in this context, particularly where this could lead to a significant cumulative effect.
- 5.60 The two closest settlements to the proposed development are the villages of Barr to the south-west and Dailly to the north. The ZTV shows that both would have potential to be affected by visibility of the proposed development. Other properties along the Stinchar Valley would also potentially be affected by visibility of the proposed development and Energiekontor will undertake a Residential Visual Amenity Survey if necessary to clearly define these effects.
- 5.61 Parts of the B741 are already heavily influenced by Hadyard Hill Wind Farm, through which it passes, an assessment of the proposed development in relation to the B741 will be undertaken and particularly from sections of the Barr to Balloch and Glentroll to Crosshill minor roads. There is potential for these effects to be significant. The B741 lies further to the west and therefore would not be so readily affected.
- 5.62 Neither of the railway lines have the potential to undergo significant effects largely owing to the enclosure by tree cover or cutting along much of the route.
- 5.63 Core Path SA46 passes through the site, while Core Path SA1 follows the route of NCR7 to the east and Core Path SA51 passes close to the south-western side of the site. The LVIA will undertake a detailed assessment of the likely effect on these local Core Paths as well as views from NCR7.
- 5.64 In addition to NCR7, the Southern Upland Way and the Ayrshire Coastal Route, walkers are attracted to the higher summits of the Merrick and Cairnsmore of Carsphairn as well as the intermediate hill ranges of South Carrick. Attractions from the coast include the isles of Ailsa Craig and Arran, and sailing is popular along this coastal edge. Effects on these receptors will be considered in the LVIA.
- 5.65 Based upon the above analysis, as a starting point for consultation and agreement, 22 provisional viewpoints are proposed (see Table 5.1) including short, medium and long-distance views from representative locations within a variety of landscape character types and from a range of key visual receptors. The table is not intended as an exhaustive list, and it is expected that consultation with SAC and SNH will result in an agreed list of viewpoints.

5.66 The ZTV has been used to inform the location of the viewpoint locations within the study area. These cover a range of visual receptors and would assess potential visual effects out to a distance of 20km. It should be noted that the ZTV does not account for the effect of screening provided by buildings and vegetation. The identified viewpoint locations include:

No	Viewpoint	Grid Reference	Distance to closest turbine/ Direction	Representative
1	A77 north of Girvan	219250/599171	7.89 km WSW	Road-users/residents
2	Grey Hill	216474/593795	10.84km WSW	Walkers
3	A714, Laigh Letterpin	220267/592636	7.47km WSW	Road-users/ Residents
4	B734 near Merkland	224013/591431	5.71km SW	Road-users/ Residents
5	Girvan – Barr Hill Path	220088/595257	6.70km W	Walkers
6	Barr Village	227704/594404	2.16km S	Road-users/ Residents
7	Merrick Summit	242754/585555	15.74km SE	Walkers. Wild Land Area
8	South Balloch	232933/595518	1.77km SE	Road-users Reside
9	Colonel Hunter Blair Monument, Kildoach Hill	239207/603941	7.91km NE	Walkers
10	River Stinchar – Minor road	230527/595793	1.13km S	Road-users /residents

11	Brunston Castle Golf Course	226243/601467	4.58km NNW	Residents/Golfers
12	Dailly	227143/601222	3.67km N	Road-users/Residents
13	Crosshill	232999/606640	7.12km N	Road-users/Residents
14	B7045, west of Kirkmichael	233419/608763	9.28km N	Road-users/Residents
15	Monument, Maybole	229581/609414	9.77km N	Walkers/Golfers
16	B734 near Doon	225746/595576	0.93km W	Road-users
17	Hadyard Hill	227069/599246	2.28km NNW	Walkers
18	North Threave	224473/604109	7.52km NNW	Road Users/Residents
19	Cairnsmore of Carspharin	259445/598001	26.69km E	Walkers
20	NCR7 near Doughty Hill	233096/599166	0.35km WSW	Walkers
21	Shalloch on Minnoch	240452/590707	10.59km SE	Walkers. Wild Land Areas
22	Cornish Hill	240525/594265	9.02km ESE	Walkers. Wild Land Areas

Table 5.1 Viewpoint locations

Q3: Can it be confirmed that a 45km study area for the LVIA is considered to be appropriate starting point for the LVIA, but that approximately 20km is suitable for the detailed assessment of likely landscape and visual significant effects?

Q4: Are the proposed viewpoint locations considered to be suitable for the LVIA?

Q5: Confirmation on the approach to the assessment of likely effects on wild land is requested

Cumulative Assessment Methodology

Baseline

- 5.67 This area has seen a number of schemes being both refused and consented on Appeal/through Scottish Ministers determination in recent years. This provides a database of information to inform consideration of cumulative impacts.
- 5.68 The pattern of wind farm development shows a concentration of wind farms along the band of foothills that follow a north-east to south-west alignment. The operational wind farms on these foothills include Dersalloch in the north-east, and Hadyard Hill Mark Hill and Tralorg in the south-west. There will be some scale disparity that would arise between the proposed turbines in comparison to Hadyard Hill windfarm and this will be assessed as part of the LVIA.

Study area (cumulative)

- 5.69 The LVIA will consider operational wind farms and wind farms under construction as part of the existing baseline. A cumulative landscape and visual assessment (CLVIA) will be undertaken with consideration of other wind farms which are consented or have undetermined applications or appeals, in addition to the wind farms that form part of the existing baseline. Cumulative wind farm information will be gathered for all wind farms within 60km radius of the Proposed Development, but the CLVIA will focus on wind farms with which there will be cumulative relationships which may give rise to significant effects (likely to be those within approximately 40km or visible from key sequential routes). Schemes at scoping stage will be included only at the reasonable request of South Ayrshire Council or SNH, and if sufficient information is available to make an informed assessment. Turbines below 50m to blade tip height will not be included in the assessment.
- 5.70 The list of wind farms for inclusion in the cumulative assessment will be drawn up during the assessment process, so as to be as up-to-date as possible at the time of submission. Sources for the list will include the local authority planning portal website and direct consultation with South Ayrshire Council and SNH.

Methodology

Cumulative Zones of Theoretical Visibility (CZTV)

- 5.71 The intervisibility of the Proposed Development with other wind farms in the surrounding area will be illustrated using combined ZTV maps and ZTVs of each wind farm overlain on a base map. Paired ZTVs will be prepared to illustrate the key relationships between the Proposed Development and other wind farms close to the site. The combined ZTVs will be colour coded to distinguish between areas where the Proposed Development is predicted to be visible (either on its own, or in conjunction with other wind farm schemes), and areas where other wind farms are visible, but the Proposed Development is not. Visualisations will include cumulative schemes in accordance with SNH guidance².

2 SNH (2017) Visual Representation of Wind Farms, Version 2.2, December 2017.

5.72 The cumulative landscape and visual assessment will be carried out in accordance with the principles contained in SNH guidance on cumulative assessment (2012³). Cumulative relationships will be assessed with a series of scenarios, considering different levels of likelihood:

- Scenario 1: the LVIA, with all existing wind farms and those under construction;
- Scenario 2: consented wind farms in addition to those in scenario 1;
- Scenario 3: wind farm proposals (submitted to planning) with undetermined applications or appeals in addition to those in scenario 2; and
- Scenario 4 (if required): wind farm proposals at scoping stage in addition to those in scenario 3.

5.73 Cumulative visual effects will be assessed through analysis of combined ZTVs, views from individual viewpoints and sequential views from routes. The magnitude of cumulative change to landscape character is the additional influence the Proposed Development has on the characteristics and character of the landscape type assuming the other wind farm schemes are already present.

Q6: Can it be confirmed that this approach to the methodology and inclusion of schemes for the cumulative assessment is considered to be appropriate?

Residential Visual Amenity Assessment

5.74 Residential Visual Amenity Assessment (RVAA) will be undertaken for properties within approximately 2km of the Proposed Development. The Landscape Institute Guidelines for RVAA ⁴ will be used to inform the assessment.

5.75 The RVAA will include properties (or property groups) considered in the LVIA to experience a high or moderate magnitude of visual change and will evaluate the potential effects on the visual component of residential amenity or 'living conditions'. The visibility of existing wind farms and those under construction will be taken into account as part of the existing baseline.

Q7: Is the proposed study area and approach to the RVAA set out above considered to be appropriate?

Night time Lighting Assessment

5.76 It is likely that the Proposed Development would include taller turbines (over 150m to blade tip), which would require visible aviation lighting. The technology relating to aviation lighting design is moving rapidly with new lights able to greatly reduce light emissions below the -1° angle from the horizontal that does not require to be lit to meet ICAO/CAA standards. A night-time Lighting Assessment therefore, would be undertaken and the methodology and approach (including production of ZTV mapping) will present the latest technology available at the time of the submission.

5.77 The assessment is likely to include 3-4 night-time photomontages illustrating the proposed lighting effects, selected from the list of LVIA viewpoints. The viewpoints likely to be included will be locations where people are more likely to be after dark. Viewpoint

3 SNH, (2012). Guidance: Assessing the Cumulative Impact of Onshore Wind Energy Developments, (March 2012).

4 Landscape Institute (March 2019) *Residential Visual Amenity Assessment Technical Information Note*.

selection and photography will be influenced by Health and Safety requirements to minimise risks.

- 5.78 The extent of the study area is likely to be restricted to 10km from the outer turbine positions according to the technical criteria of the proposed candidate light fixtures.

Mitigation

- 5.79 The primary form of mitigation for landscape and visual effects, including cumulative effects, is through iterative design of the layout of the turbines and associated infrastructure, as seen from key viewpoints. The primary form of mitigation for visible aviation lighting is currently developing through lighting design/technology. The process and justification for design development will be set out in detail in the Design Strategy that will form part of the EIA Report.

Consultation

- 5.80 The consultees below will be approached for information to inform the LVIA and Cumulative assessment:

- South Ayrshire Council Council;
- Scottish Natural Heritage (SNH); and
- Scottish Wild Land Group

Q8: Are there any other relevant consultees who should be consulted about the LVIA process?

ii) Hydrology, Hydrogeology and Geology

- 5.81 This section of the EIAR will assess the Hydrology, Hydrogeology and Geology of the Site and its surrounds.

Baseline

- 5.1 There is a network of regular artificial drainage associated with the coupes of coniferous forestry as well as a number of other natural watercourses present within the site boundary. The site is drained by a number of small burns, which mainly form tributaries to the Water of Girvan to the north and the River Stinchar to the south.
- 5.2 A review of the SEPA Indicative River & Coastal Flood Map shows no areas at risk of flooding within the proposed wind farm site. The SNH Carbon and Peatland Map shows that the vast majority of the Site is located within Class 5 peat with small pockets of Class 1 and 3 peat. Where necessary, peat depth survey will be undertaken, in accordance with Scottish Government guidance.

Approach

- 5.3 The assessment will consist of the following key stages:

Consultation: The Scottish Environment Protection Agency (SEPA), Scottish Water (SW) and the South Ayrshire Council will be contacted for information within the identified hydrological study area pertaining to:

- Localised flood events;
- Public and private abstractions; and
- Localised water quality related issues

5.4 **Desktop Study:** A review of data collated during initial consultation will be supplemented by an assessment of available information regarding:

- Designated sites and their features;
- 1 in 200 year fluvial flood extents;
- River Basin Management Plan status; and
- Features of the underlying geology and hydrogeology

5.5 **Site Visit:** An initial walkover survey will be undertaken to confirm watercourse locations as mapped on a 1:10,000 OS map, topographic and localised ground conditions, including man-made drainage networks.

5.6 **Constraints Review:** Exclusion buffers will be assigned to the hydrological receptors identified previously – its size dependent on the receptor's sensitivity.

5.7 When assessing the potential impact of activities, current industry good practice will be considered as embedded mitigation i.e. part of the construction process. The impact assessment will combine the sensitivity of a receptor with the magnitude of a potential impact to result in an overall significance. This will be considered in the context of current EIA regulations and accompanied by mitigation measures to avoid, reduce or offset significant impacts.

Presence of Potential Groundwater Dependent Terrestrial Ecosystem

5.8 Wetlands connected to the groundwater are defined as Groundwater Dependent Terrestrial Ecosystems (GWDTEs) under the Water Framework Directive, which is transposed into Scottish Law, through the Water Environment and Water Services (Scotland) Act (WEWS) 2003. Such wetlands are protected through WEWS and WFD from significant damage or deterioration.

5.9 To identify non-designated GWDTE, it is proposed that SNIFFER (2009) WFD95 guidelines will be assessed from Phase 1 Habitat Survey data.

5.10 Where necessary, A National Vegetation Classification (NVC) survey will be undertaken to supplement the above. NVC data will be used in order to provide a risk assessment of the likelihood of any potential GWDTE (i.e. that listed at Appendix 4 of the LUPS-GU31 Guidance) and whether there is connectivity to a groundwater resource.

5.11 Where proposed infrastructure will require deep excavation, greater than a depth of 1m, all potential GWDTE will be mapped to NVC level within 300m of these infrastructure locations. Where possible spot checks of water chemistry will be undertaken to assess, whether or not, the water derives from a groundwater resource.

5.12 Where practicable to do so, all GWDTEs will be avoided through iterative design, however it is recognised that it may not be possible to avoid all potential GWDTEs and where avoidance is not possible, mitigation through retaining connectivity will be deployed where appropriate.

5.13 Away from the 300m buffer of infrastructure; a Phase 1 survey with the identification of wetland types using SNIFFER (2009) will be undertaken.

Potential Effects and impact assessment

5.14 Wind farm construction, and operation and decommissioning involve activities that may affect hydrological, hydrogeological or geological environments. The EIA will identify these activities, assess the significance of their potential impacts, and outline appropriate mitigation measures. Impacts will be assessed relative to a detailed baseline description and conceptual understanding of the existing hydrological and hydrogeological environment.

5.15 The assessment of potentially significant effects and devising of appropriate mitigation measures will utilise relevant legislation, policies and guidance. In particular, this will include, but not limited to:

- Water Framework Directive (2000/60/EC) (WFD), and associated legislation
- The Water Environment (Controlled Activities (Scotland) Regulations 2011 and SEPA Practical Guide.
- Scottish Planning Policy (SPP).
- Flood Risk Management (Scotland) Act.
- SEPA Pollution Prevention Guidelines (PPGs)
- SEPA Land Use Planning System Guidance Note 4 and 31 (LUPS)
- C692: Environmental Good Practise on Site (Third Edition) (CIRIA, 2010).
- C649: Control of Water Pollution from Linear Construction Projects – Technical Guidance (CIRIA, 2006b).
- C532: Control of Water Pollution from Construction Sites (CIRA, 2001).

5.16 The impact assessment in the EIAR will follow best practice guidance and consider the potential impact of the construction and operation of the Proposed Development on:

- Surface water runoff rates and volumes and resultant flood risk;
- Erosion and sedimentation;
- Surface water quality and pollution of surface water;
- Quality and quantity of public and private water supplies;
- Site drainage (tracks, turbine foundations and hardstanding areas);

- Drainage pathways and GWDTEs;
- Watercourse crossing locations, and
- Peat risk and peat waste management

- 5.17 The locations of proposed turbines and associated infrastructure will be considered against a baseline conditions to identify any likely constraints to development.
- 5.18 Mitigation will identify possible measures to avoid and mitigate any potentially significantly adverse effects resulting from the development. Measures will include best practise construction management as well as utilising appropriate Sustainable Drainage Systems (SuDS) measures to treat and attenuate runoff. Hardstanding areas such as turbine foundations and access roads will require drainage which will be designed as appropriate.
- 5.19 The EIAR will consider, where appropriate, sustainable drainage principles with a view to minimising the potential risk of flooding at the Site and preventing the Proposed Development from causing flooding, groundwater or watercourse pollution.

Borrow Pit Assessment

- 5.20 A review of suitability of materials on the Site will be undertaken and borrow pit search areas will be identified as part of the Borrow Pit Assessment. If appropriate areas are identified a description of likely materials, borrow pit size and the ability to supply appropriate materials for the construction of the windfarm will be included.

Consultation

- 5.21 As part of the consultation phase of the project, views of the Proposed Development will be sought from:
- SEPA;
 - Scottish Water;
 - South Ayrshire Council; and
 - Scottish Natural Heritage

Q9: Is the proposed scope of assessment set out above deemed to be appropriate?

ii) Archaeology and Cultural Heritage

- 5.22 This chapter of the EIAR will identify archaeological and cultural heritage assets that may be subject to impacts, both within the limits of the application site and beyond, establish the archaeological potential of the development site, assess the predicted impacts and propose a programme of mitigation where appropriate. It will consider both indirect and direct effects, including impacts on the setting of heritage assets.

Baseline

- 5.23 A heritage asset is defined as any element of the historic environment which is of sufficient cultural significance to merit consideration in the planning process. Designated assets include Scheduled Monuments, Listed Buildings, World Heritage Sites, Conservation Areas, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields and Historic Marine Protected Areas. Other assets may also be locally designated through policies in the Local Plan.
- 5.24 The majority of heritage assets are not designated. Some undesignated assets are recorded in Historic Environment Records (HERs) maintained by local authorities and other agencies. However, many heritage assets are currently unrecorded, and the information contained in HERs is not definitive.

Potential Effects

- 5.25 An initial assessment indicates that there are no significant on-site constraints to the Proposed Development and the area has low archaeological potential.
- 5.26 There is a small, abandoned farmstead, named as 'Braker', and a boundary between the parishes of Barr and Dailly marked by 'piles of stones' and 'mounds'; both of which are on shown the Ordnance Survey 1st edition map. The current land-use is almost entirely commercial forestry but the location of the farmstead at 'Braker' is marked on modern Ordnance Survey maps suggesting that some remains of the farmstead survive within the plantation. It is unlikely that much, if anything, survives of any of the 'piles' of stones' or 'mounds' marking the parish boundary. Provided that the marked location of the old farmstead is avoided there should be no constraint, in regard to cultural heritage interests, on the siting of turbines or placement of other infrastructure.

Off-site (setting) matters

Archaeology and Scheduled Monuments

- 5.27 An initial review of the archaeology and built heritage in the wider landscape suggests that there are only a few heritage assets in close proximity and the settings of which could be adversely affected by the proposed development. These are:
- Schedule Monuments Mote Knowe, motte, Kilkerran (SM2863) which lies 1.5 km to the northwest of the Site boundary and lies low down within the narrow Lindsayston Burn.
 - Category B Listed Kilkerran Castle (LB96) to the northwest (2km) some 500m northwest of Mote Knowe.
 - Closest other Scheduled Monuments are a group of enclosures: Knockinculloch (SM3357) (ca. 1.5km to the northeast) and a chambered cairn (Bencallen Hill, chambered cain (SM3890), in forestry ca. 3km to the southeast.

Potential effects

- 5.28 Topographic screening would limit the visual impact on the settings of both assets; Kilkerran Castle lies within an area of mixed woodland which would afford additional screening.
- 5.29 It is likely that there would be visibility of the proposed development from the assets and their settings would be affected to some degree although there is likely to be some visibility

of the operational Hadyard Hill Wind Farm indicating that the impact is more likely to be cumulative in nature.

- 5.30 In addition to the Scheduled Monuments identified, there are several non-designated heritage assets that appear in the Historic Environment Record (HER) as being potentially of national importance (Non-Statutory Register (NSR) sites. These include remains of three burial cairns of probable Bronze Age date that lie along the River Strinchar valley, some 1-1.5km to the south of the proposed development. Their settings would also be affected by the proposed development but to a limited extent. These will be assessed within the EIAR.

Listed Buildings and Designed Landscapes

Baseline

- 5.31 To the north of the proposed development, along the Water of Girvan valley, there are three Inventory Gardens and Designed Landscapes (Bargany, Kilkerran and Blairquhan), each of which provides the setting for a Category A Listed Building. There are also a number of non-inventory designed landscapes; three of which, Bargany, Dalquharran and Kilkerran, coalesce to form an extensive designed landscape along the valley from Old Dailly in the southwest to near Crosshill in the northeast.

Potential Effects

- 5.32 The impact of the proposed development on the settings of the Category A Listed Buildings of Bargany House (LB1171), Dalquharran Castle (LB125) and Kilkerran House (LB1114) and the Scheduled Monument of Old Dalquharran Castle (SM316) will be considered within the EIAR.
- 5.33 Other assets are enclosed within wooded landscape settings and would not be readily visible and seen together with the proposed development. There may, however be locations within the individual designed landscapes from where the main houses would be visible with the proposed development as a backdrop; albeit at higher elevations and beyond the skyline.
- 5.34 Settings would be affected by the Proposed Development as the proposed turbines would sit along the elevated ridgeline to the south and southeast of the Water of Girvan valley, in views across the designed landscapes, but these would be seen in conjunction with, and as an extension to, Hadyard Hill Wind Farm. There may be viewpoints from which a significant impact on the settings of Category A Listed Buildings would arise, e.g. Bargany House when viewed from the Category B Listed Duke's Bridge (LB1172), to the north of the House, or Kilkerran House when viewed from the B741 or on the approach drive to the House from the north.

Proposed Scope of Assessment

- 5.35 The assessment of potential impacts on archaeology will comprise a desk-based assessment and a site walkover. Should the potential for buried archaeology be revealed, an archaeological evaluation may also be required in order to assess the extent and importance of any archaeological features. Additionally, an assessment of impacts on the setting of cultural heritage resources will be undertaken.

- 5.36 Historic Environment Scotland (HES) will be consulted regarding any impacts on nationally designated heritage assets.

Methodology

- 5.37 The Inner Study Area (within the Site boundary) will include a suitable buffer around all areas where construction works are proposed. A comprehensive desk-based study will be carried out for this area, based on all readily available sources including:

- Designation data downloaded from HES;
- The National Record of the Historic Environment (NRHE), including the Canmore database and associated photographs, prints / drawings and manuscripts held by HES;
- Historic Landscape Assessment data, viewed through the HLAMap website;
- The National Collection of Aerial Photography (NCAP);
- Geological data available online from the British Geological Survey;
- Historic maps held by the National Library of Scotland;
- Ordnance Survey Name Books;
- Unpublished maps and plans held by the National Records of Scotland; and
- Readily available published sources and unpublished archaeological reports.

- 5.38 The outer study area will extend up to 20km from the proposed turbines, which is taken as the maximum extent of potentially significant effects on the settings of heritage assets. Within the outer study area, assets will be included in the assessment based on the level of importance assigned to the asset, so as to ensure that all significant effects are recognised.

- 5.39 Preliminary screening of heritage assets in the outer study area will be undertaken, using data from HES and the HER in conjunction with the ZTV, to identify assets requiring detailed assessment. Within the outer study area, assets will be included in the assessment according to the following criteria:

- Up to 2km from proposed turbines: Category C Listed Buildings, and any undesignated assets of local importance which has a wider landscape setting that contributes substantively to its cultural significance;
- Up to 5km from proposed turbines: all assets of national or regional importance, including Scheduled Monuments, Category A and B Listed Buildings, Conservation Areas, Inventory Gardens and Designed Landscapes, Inventory Historic Battlefields and undesignated assets of more than local importance;
- Up to 20km from proposed turbines: any asset which is considered exceptionally important, and where long-distance views from or towards the asset are thought to be particularly sensitive, in the opinion of the assessor or consultees.

Q10. Are the distances set out above sufficient for survey purposes?

- 5.40 The targeted walkover survey will involve systematic coverage of all areas that can be safely and effectively accessed within 100m of proposed turbines, tracks and other infrastructure, to check for any previously unrecorded heritage assets. This will check the results of the documentary research and will record any previously unrecorded assets and their current condition.

- 5.41 Heritage assets with potential for significant impacts on their setting will also be visited to assess baseline conditions and assess the level of impact, with reference to visualisations where necessary.
- 5.42 The assessment of impacts will consider:
- Potential direct and indirect construction impacts upon cultural heritage assets within the inner study area; and
 - Potential impacts on the settings of designated heritage assets within the outer study area, including cumulative impacts with other existing, consented or proposed wind energy developments in the surrounding area.

Design and Mitigation

- 5.43 The design of the wind farm will take into account the potential effects of the wind farm on the settings and significance of designated heritage assets. Where effects on undesignated heritage assets cannot be avoided, mitigation measures such as archaeological excavation and recording / watching brief will be proposed.
- 5.44 The assessment will be carried out with reference to the following policy and guidance:
- Chartered Institute for Archaeologists 2017 Standard and Guidance for Historic Environment Desk-Based Assessment;
 - Scottish Planning Policy (2014);
 - Historic Environment Scotland Policy Statement (HESPS) 2016;
 - Ancient Monuments and Archaeological Areas Act (AMAAA) (1979);
 - Planning (Listed Buildings and Conservation Areas) (Scotland) Act (PLBCAA) (1997);
 - Historic Environment (Amendment) Scotland Act (HEASA) (2012);
 - The Scottish Historic Environment Policy (SHEP) (Historic Scotland, 2011);
 - The Planning Advice Note (PAN) 2/2011 (Scottish Government, 2011); and
 - Managing Change in the Historic Environment: Setting (Historic Scotland, 2016).

Proposals for Consultation

- 5.45 The assessment will be undertaken in consultation with the following stakeholders:
- Historic Environment Scotland; and
 - West of Scotland Archaeology Service.
- 5.46 A list of heritage assets will be included in the settings assessment once the scheme layout has been sufficiently advanced. The list of heritage assets will be prepared using the criteria set out above and will be agreed with the stakeholders as part of the EIA process.

iii) Biodiversity

- 5.47 This section of the EIAR will consider the likely ecological and ornithological impacts associate with the Proposed Development. Effects on a range of ecological receptors including key habitats and species will be included. Avoidance, mitigation, enhancement and habitat creation will be proposed and included as part of the EIAR.

Terrestrial & Aquatic Ecology

Introduction

- 5.48 This EIA chapter will assess the potential effects and impacts on ecological interests resulting from the construction, operation and decommissioning phases of the Proposed Development. The assessment will follow the Chartered Institute of Ecology and Environmental Management Guidelines for Ecological Impact Assessment in the UK and Ireland (2018).
- 5.49 Gavia Environmental was commissioned by EnergieKontor to undertake 1) an extended Phase 1 habitat survey, followed by a NVC assessment of habitats within a buffer of 300m of proposed turbine locations and borrow pits and 100m of proposed tracks, with a particular focus on habitats with potential GWDTE which may be impacted by the proposed development and 2) Fish and Fresh Water Pearl Mussel (FWPM) Habitat assessment of flowing watercourses draining from within the development boundary. These Reports will form part of the Technical Appendices submitted with the EAIR. This section summarises the findings of the aforementioned reports and the approach to assessment for the EIAR. Further survey, with regard to protected mammals, including bats, and survey for protected fish species and aquatic invertebrate species will also be undertaken using electric fishing and FWPM surveys.

Extended Phase 1 Habitat Survey, NVC and GWDTE

Guidance / Legislative Context

- 5.50 The assessment methodology will be in line with the following policy, guidance and legislation:
- European Union Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora;
 - European Union Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy ("Water Framework Directive");
 - Environmental Impact Assessment Directive 2014/52/EU; and
 - Wind energy developments and Natura 2000 (EC 2011).

The following national legislation will be considered as part of the assessment:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) ('The Habitats Regulations');
- The Water Environment and Water Services (Scotland) Act 2003 (as amended) (WEWS);
- The Nature Conservation (Scotland) Act 2004 (as amended);

- The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended)

Desk Study

- 5.51 Prior to the field survey, a desk study was undertaken to provide up to date ecological information on statutory designated sites, European and UK protected species within 5km of the Site (from the last 10 years) and geological information on bedrock formation and habitats.
- 5.52 A search of publicly available information of the National Biodiversity Network (NBN), available for commercial purposes, on protected species records in the 5 km grid square the Site is situated in;
- Scottish Biodiversity List;
 - South Ayrshire Local Biodiversity Action Plan (LBAP) (2010);
 - Multi-Agency Geographical Information for the Countryside (MAGIC); and
 - British Geological Survey Digital Maps.
- 5.53 The desk study highlighted the following:
- Blair Farm Site of Special Scientific Interest (SSSI), designated for its geology, is located approximately 2.1 km north, of the Site boundary. SNH site code: 224;
 - Auchalton SSSI, designated for its lowland grassland, is located approximately 3.5 km north of the Site boundary. SNH code: 96; and
 - Knockgardner SSSI, designated for its Wenlock geology, is located approximately 4.4 km north-east of the Site boundary. SNH code: 879.
 - No potential GWDTE habitats were identified within the Site or buffer from the data collected in the desk study.
 - British Geological Society (BGS 1:50,000 Digital Geological Maps) indicate that the bedrock geology of the survey site is primarily underlain by Swanshaw formation sandstone with a small area of volcanic Duneaton formation basaltic-andesite to the north of the Site and a small area of unnamed igneous bedrock to the south of the Site.
 - An unnamed fault line runs south west across the very northern edge of the Site boundary, however no faults run through the Site.
 - The desk study returned one record of pine marten *Martes martes* and three records of red squirrel *Sciurus vulgaris* within 5 km of the Site. However, none were recorded or found within the Site or buffer area.

Methodology

Field Survey Methodologies

- 5.54 The Extended Habitat Survey Report sets out the approach to survey methodologies for NVC and GWDTE and is summarised below.
 - 5.55 For GWDTE, initial mapping was undertaken with aerial photography overlain on the Sites boundary to map habitat extents and identify any likely relevant features. A full list of NVC communities will be provided in the EIAR based on the SNIFFER report and relevant documents.
 - 5.56 All potential 'high' GWDTE's were systematically sampled to enable characterisation of the habitats and water supply mechanisms. Random sampling was applied to potentially 'moderate' dependency habitats.
 - 5.57 Phase 1 habitats were established following the results of the NVC survey and NVC results provide a detailed example of the habitats present.
 - 5.58 The survey included the documentation of habitats to a recognised standard, but is 'extended' in that it also includes the recording of signs indicating the presence or potential presence of species that could constitute a material consideration in planning terms. This would include reptiles, amphibians, fish, birds, mammals, and any stands of invasive non-native plants.
 - 5.59 The walkover survey recorded evidence of all mammals with particular focus on species listed in Schedule 2 of the Habitat Directive (European Protected Species), Schedule 5 of the Wildlife & Countryside Act 1981 (UK Protected Species), and/or the Scottish Biodiversity List/Local Biodiversity Action Plan; and Badger Protection Act, 1992.
 - 5.60 The walkover followed general methodologies for mammals outlined by MacDonald et al. (1998) with the following methodologies for specific species: Otter and water vole; Chanin (2003) and Strachan & Moorhouse (2006) respectively, and badger; (Scottish Badgers, 2018).
- Bats
- 5.61 Bat activity surveys, comprising of the deployment of static recorders, will be completed throughout the main bat activity season (May to September) covering the three key activity periods: spring migration, maternity and dispersal/mating.
 - 5.62 To comply with current industry guidance (SNH et al, 2019), static detectors will be deployed for a minimum of 10 nights in each of: spring, summer and autumn. Under current guidance detectors should be placed at ten potential turbine locations, plus a third of additional potential turbine sites to a maximum of 40 detectors (SNH et al, 2019), therefore for a site of this size 12 static detectors will be recommended.
 - 5.63 Anabat Swift and Anabat Express bat detectors recording to an SD card will be used for the static monitoring. Omnidirectional microphones were used on all detectors and, where possible, detectors will be placed 2 m above the ground. They are programmed to begin recording an hour before sunset and stop one hour after sunrise. Standard guidance recommends recording within 30 minutes of sunset and sunrise; however, extending this to 1 hour of sunrise and sunset allows for the assessment of any early emerging species such as Nyctalus on the Site.

Results

Field Survey Results

NVC Habitat Results

- 5.64 In total, the NVC survey identified 19 habitat types (including mosaics) across the Site and buffer and these will be presented in the EIAR. The habitats detailed will be compared with those NVC communities listed under SEPA's LUPS GU31 (Appendix 4) of planning guidance documents (2017). Any habitats with NVC codes listed in the Appendix of the SEPA LUPS GU31 guidance are considered suitable to support potential GWDTEs.

Potential GWDTE Survey Results

- 5.65 Of the habitats recorded during the NVC survey, the following were identified with a potential at 'high' level for dependency on a groundwater resource:
- M6 Carex echinate – Sphagnum recurvum mire; and
 - M23 Juncus effusus/acutiflorus – Gallium palustre rush-pasture
- 5.66 The following habitats were identified with a potential at 'moderate' level for dependency on a groundwater resource;
- M15 Scirpus cespitosus – Erica tetralix wet heath; and
 - M25 Molinia caerulea – Potentilla erecta mire.
- 5.67 Only habitats composed entirely of the above communities were included. The percentage cover of potential GWDTE habitats will be presented in the EIAR as well as Phase 1 Habitats.

Protected Fauna Walkover Results

- 5.68 The dense nature of the plantation limited survey through the majority of the Site which limited accessibility to check for signs of badger. The plantation edge was walked to identify any tracks, territory boundary markings or outlier setts, however, no evidence of either was recorded. Similarly, while commuting across the Site, no evidence of badger, pine marten or red squirrel field signs were recorded along the main access track.
- 5.69 No places of shelter or spraints were identified along the water courses and drains. No burrows or evidence of water vole were recorded. Though not specifically surveyed for, no evidence of adder or common lizard was recorded within the habitats across the Site buffer and habitat was considered to be sub-optimal to support these species in the main part of the site; however boundary features hold potential to support reptiles and refugia could be present within the development boundary.

GWDTE Results

- 5.70 Of the habitats identified within the Site development area and 150 m buffer, following assessment of the hydrogeology and the water chemistry, the potential GWDTE habitats 'actual' dependence on ground water was assessed. Ground water was identified at three sample points. One of these is classed as 'high' dependency on ground water and

two classed as 'moderate' dependency on ground water. All other habitat samples are classed as low or negligible dependency and no GWDTE were present within the development area as potential ground water tables will have been altered by tree planting.

Summary

- 5.71 Of the broad habitats identified in the Phase 1 survey, two habitats, Northern Atlantic wet heath with *Erica tetralix* and blanket bogs are Annex 1 habitats under the EC Directive 92/43/EEC on the Conservation of Natural Habitats and Wildlife Fauna (The Habitats Directive). These habitats were identified across the 150m buffer and not within the development area.
- 5.72 No protected mammals were identified during the Extended Phase 1 Habitat survey, however, given the habitats present within the site and given the size of the Site, the dense plantation and transient nature of the protected mammals there is potential for UK and European protected species such as badger, pine martin, squirrel, water vole and otter to be present. Otter will likely utilise the burns and water courses at certain times of year, particularly for foraging during spring/summer when food is abundant (i.e. frog spawning). Further protected mammal species surveys will be undertaken in 2020.

Fish Habitat and Freshwater Pearl Mussel (FWPM) Surveys

- 5.73 The assessment methodology for FWPM is set out within the Report (and noted in the sections below) and this will be reflected in the EIAR chapters and reported in line with the following policy, guidance and legislation:
- European Union Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora;
 - European Union Council Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy ("Water Framework Directive");
 - Environmental Impact Assessment Directive 2014/52/EU; and
 - Wind energy developments and Natura 2000 (EC 2011).
- 5.74 The following national legislation will be considered as part of the assessment:
- The Wildlife and Countryside Act 1981 (as amended);
 - The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) ("The Habitats Regulations");
 - The Water Environment and Water Services (Scotland) Act 2003 (as amended) (WEWS);
 - The Nature Conservation (Scotland) Act (as amended);
 - The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended);

- The Wildlife and Natural Environment (Scotland) Act 2011

5.75 These surveys were undertaken to assess and report on the Fish and Freshwater Pearl Mussel (FWPM) habitat quality and utilisation potential. The assessment covered waterbodies that flow into and out of the development site boundary and provided information on the suitability or not of these receptors in relation to support populations of fish and FWPM.

5.76 Survey locations and rationale for selection for both surveys (Fish Habitat and FWPM) will be provided in the EIAR. Fourteen (14) survey locations were identified for the fish survey and two (2) locations were identified for the FWPM. Further survey to assess fish and freshwater pearl mussel presence and population status will be undertaken in June 2020.

River / Fish Habitat Survey

5.77 Following the survey work, each survey location was given a rating for fish habitat quality and fish utilisation potential (poor, low, moderate, good, or high). At each of the fish habitat survey locations, in-situ water quality monitoring was also carried out using the following parameters: temperature; pH; Electrical Conductivity; and, Total Dissolved Solids.

5.78 A summary of the fish habitats characteristics recorded within the survey locations will be provided in the EIAR and will include the fish utilisation potential, habitat quality and reach description (and limiting factors) as well as the result of water quality variables recorded within each of the fourteen fish habitat survey locations.

5.79 Fish Utilisation potential and Fish Quality habitat ranged from Poor to High.

5.80 The habitat quality at each survey location was variable for supporting salmonid populations. Some sites had good combinations of flow types, instream cover, bankside cover, depths and variable substrates providing suitable habitat for fish. Others were unsuitable to support salmonid populations with limiting factors including steep gradients, shallow water depths and bedrock substrates.

5.81 Some sites were also affected by known barriers to fish migration further down the catchment like impassable falls. All but one of the survey locations are likely to be inaccessible to migratory fish due to impassable falls further down the Stinchar and Girvan catchments. Migratory fish within these catchments still have the potential to be impacted by cumulative effects of run off from the development as there is known populations of salmon (and most likely sea trout) downstream below the impassable sections.

5.82 For species other than salmonids there were few areas of suitable habitat for juvenile lamprey and there were areas of habitat where European eel may generally be found.

FWPM Habitat Survey

5.83 Two survey locations were identified for the FWPM assessment: Dalquhairn Burn and Auchengairn Burn.

5.84 FWPM habitat will be graded taking into account criteria for factors for Determining FWPM Habitat Classification. During the FWPM habitat survey, observations and target notes were recorded in the context of varying habitat/flow types, water depth, substrate, bankside cover and potential limiting factors. From this, further analysis was undertaken,

and evaluations were made for modifications and utilisation potential (juvenile and adult mussels), and FWPM habitat quality at survey locations.

- 5.85 The EIAR will present a summary of the FWPM habitat characteristics within the survey locations. FWPM utilisation ranged from low to good but neither of the survey locations were classified as high. FWPM habitat quality ranged from moderate to good but again, neither of the survey locations were classified as high.

Conclusions

- 5.86 The Report, which will form part of a Technical Appendix to the EIAR recommends that:

“Fully-quantitative electrofishing surveys are carried out at all of the survey locations rated Moderate and above for fish habitat quality and fish utilisation potential to strengthen the overall baseline fish assessment.

Freshwater pearl mussel field surveys are carried out at the survey locations rated as Moderate and above for FWPM habitat quality and FWPM utilisation potential. It is also recommended that a construction and post-construction fish and water quality monitoring programme is carried out as part of an ongoing assessment of potential impacts, which may occur due to the development. This will help to protect the development in the longer term and provide evidence of scale of impact on the surrounding watercourses from any pollution incidents which may or may not be directly related to the development”.

- 5.87 The Report includes a suggested monitoring schedule for construction and post construction monitoring:

Fish habitat, fish fauna, FWPM habitat and FWPM fauna — annually during construction (summer) and post-construction Year 1 (summer) and Year 2 (summer).

- 5.88 In addition, the following construction advice is also recommended:

The presence of fish fauna within particular watercourses (as determined from fish fauna surveys) should be used to inform the design of any watercourse crossings, CAR licence applications and mitigation for watercourse crossing installations;

Appropriate mitigation measures should be incorporated into the scheme to avoid damage of watercourses and any resident fish populations;

A suitably qualified / experienced aquatic clerk of works (ACoW) should be on site for the duration of the construction period; and

An appropriately designed water quality monitoring programme should be undertaken pre, during and post construction.

Q11: Do you agree with the conclusions and recommendations of the ecology Reports summarised above?

Proposals for Consultation

- 5.89 The assessment will be undertaken in consultation with the following stakeholders:

- Scottish Natural Heritage;
- South Ayrshire Council – Biodiversity Officer;
- Scottish Environment Protection Agency;
- Marine Scotland;
- Ayrshire Rivers Trust;
- River Stinchar District Salmon Fishery Board
- Scottish Wildlife Trust.

Q12. Are there any other stakeholders that should be consulted as part of this process?

Ornithology

- 5.90 This EIA chapter will assess the potential effects and impacts on ornithological interests resulting from the construction, operation and decommissioning phase of the Proposed Development.

Introduction and initial consultation

- 5.91 A 12 month ornithological monitoring exercise that has been undertaken for the Site which was carried out between October 2018 – September 2019.

Surveys undertaken in 2018-2019 Survey Season

- 5.92 Key target species for the assessment have been identified following SNH (2018a) guidance using the following criteria:
- Species listed in Annex 1 of the EU Birds Directive
 - Species listed on Schedule 1 of the 1981 Wildlife & Countryside Act
 - Species identified by SNH (2018a) as Priority bird species for assessment when considering the development of onshore wind farms in Scotland. These include (a) species that widespread across Scotland which utilise habitats or have flight behaviours that may be adversely affected by a wind farm and (b) as 'restricted range' species; and
 - Red listed species on the Birds of Conservation Concern list (Eaton et al. 2015)
- 5.93 The following surveys were undertaken in the period from October 2018 - September 2019, with detailed methods for each presented below:
- Flight activity survey;
 - Breeding raptor survey;
 - Black grouse survey; and
 - Moorland breeding bird survey

Guidance / Legislative Context

- 5.94 The assessment methodology proposed has been guided by the following policy, guidance and legislation:

- Scottish Natural Heritage (2012). Assessing the cumulative impact of onshore wind farm developments..
- Scottish Natural Heritage (2016). Assessing Connectivity with Special Protection Areas (SPAs) – Version 3.
- Scottish Natural Heritage (2017). Recommended Bird Survey methods to inform impact assessment of onshore wind farms.
- Scottish Natural Heritage (2018a). Assessing Significance of Impacts from Onshore Wind Farms Out with Designated Areas.
- Scottish Natural Heritage (2018b). Assessing the cumulative impact of onshore wind farm developments.

Desk Study

5.95 A desk study was undertaken prior to the commencement of fieldwork. This provided an up to date account of ecological information regarding any statutory nature conservation sites within 5 km of the Site, any European or UK protected species within 5 km of the Site and the broad habitat types that occur on site and within a 500m buffer. Information was sought from the following sources:

- A search of publicly available information, available for commercial use, on protected species records in the 5 km grid square the Site is situated in, dated within the last 10 years;
- SNH SiteLink; and
- Multi-Agency Geographical Information for the Countryside (MAGIC).

5.96 The desk study highlighted three statutory designated sites within 5 km of the Site:

- Blair Farm Site of Special Scientific Interest (SSSI), designated for its geology, is located approximately 2.1 km north, of the Site boundary. SNH site code: 224.
- Auchalton SSSI, designated for its lowland grassland, is located approximately 3.5 km north of the Site boundary. SNH code: 96.
- Knockgardner SSSI, designated for its Wenlock geology, is located approximately 4.4 km North-East of the Site boundary. NSH code: 879.

Assessment Methodology

Flight Activity Survey

5.97 Surveys followed Scottish Natural Heritage (SNH) standard guidelines for conducting ornithological surveys for onshore wind farms (SNH, 2017). The data collected allowed the flight activity and number of birds involved to be estimated over a given timeframe as well as showing spatial and temporal flight activity patterns.

5.98 Surveys are being conducted from 5 vantage point (VP) locations which were chosen to provide a wide and unrestricted view of the proposed development area and a 500 m buffer.

5.99 The paths of all observed flights were drawn directly onto 1:25,000 OS maps while the following flight data was recorded:

- Flight start time;
- Species (where identification was uncertain, observations were identified to species group level at a minimum);
- Flock size;
- Flight duration;
- Bird(s) occupancy at one of three height bands (Band 1 = <20 m, Band 2 = 20-200 m, Band 3 = >200 m) for every 15 second flight time interval; and,
- Behaviour (including territorial or nesting behaviour).

5.100 In addition to flights by target species, the presence and behaviour of any other notable species which may be potentially vulnerable to the effects of wind turbines (secondary species) was also recorded.

5.101 The list of target species included the following: All Schedule 1 raptor species, all owl species, all divers, all waders, all geese, swans and ducks (excluding mallard), all grebes, all auks, cormorant, herring gull, kittiwake, and great black backed gull. Secondary species included all other gull species, all other raptor species, and raven (SNH, 2017).

Breeding Raptor Survey

5.102 These surveys followed SNH's guidance for ornithological surveys for onshore wind farms (SNH, 2017) and were conducted using a methodology adapted from the species-specific survey methods detailed in Hardey et al. (2013). Surveys covered the proposed windfarm development area and a buffer of 2 km to account for wider ranging raptor species (where land access permitted).

5.103 Searches focused on habitats such as heathland and similar open habitats, craggy rock faces and cliffs (where present), steep sided burns, trees along the forest edge and older stands of trees within afforested areas. Searches were also informed by the results of the flight activity VP surveys detailed above.

Black Grouse Survey

5.104 Following the guidance of Etheridge and Baines (1995), aerial imagery was consulted to identify mosaics of moorland, heath, and margins of coniferous plantation and rough grazing (all suitable black grouse lekking habitats) prior to visiting the Site. During the March and April VP surveys, ground truthing was undertaken to further identify any potential lek sites within a 1.5 km buffer of the potential development area. In accordance with Gilbert et al. (1998), each suitable lek site was observed, walking within 500 m of each area, watching and listening for any displaying males during an early morning and late evening watch with surveys undertaken in early May.

Breeding Bird Survey

5.105 The breeding bird survey undertaken generally followed the methodology set out by the British Trust for Ornithology (BTO) and simultaneously adapted the Constant Search Method (Brown & Shepherd, 1993), modified to four visits in accordance with Calladine et al. (2009). Survey area included all areas of open ground, within the potential development area plus a surrounding buffer of 500 m. Surveyors approached all areas of open moorland to within 100 m and the behaviour of all birds seen or heard was recorded on 1:10,000 OS

maps using standard British Trust for Ornithology (BTO) Common Bird census (CBC) coding and notation (Marchant, 1983).

- 5.106 All breeding bird survey records were entered into ArcView Geographical Information System (GIS) software. These were analysed following the methods of Calladine et al. (2009) to identify the minimum number of probable or confirmed breeding territories for each species encountered. Territories were assumed given certain bird behaviours such as; singing, calling, aggressive encounters and displaying. The only exception to this was for meadow pipit and skylark since territory mapping is ineffective due to the species' high abundance in upland environments.

Field Survey results

- 5.107 A total of eight target species were recorded, of which 3 (hen harrier, peregrine and merlin) are Schedule 1.1 and Annex 1 species. The majority of sightings were associated with transitional movements within or across the Site, with observations also made of species commuting across the Site and around the development area buffer zone.
- 5.108 The Target Species recorded and presented in Table 14 of the Report were:
- Merlin
 - Woodcock
 - Hen Harrier
 - Grey Heron
 - Peregrine
 - Pink-footed Goose
 - Snipe
 - Curlew
- 5.109 The Report will form part of the Technical Appendix for the EIAR. It recommends that turbine locations should avoid the very edge of the Site development area thus minimising disturbance to breeding birds within the Site buffer and that turbine locations should either avoid goose flight lines or any within flight line range should have down time scheduled at high risk time periods for goose passage.

Summary

- Pink-footed geese were observed during the end of March 2019, although this is counted as the summer season, it is likely this is a late migratory flight as this species is a winter visitor to the UK and breeds in Iceland, Greenland and Spitsbergen.
- Territories for breeding birds were recorded, including those for curlew which are red listed on the UK Birds of Conservation Concern List. However, no territories were confirmed within the Site development area and the closest territory recorded was approximately 400 m from the site boundary (distances for curlew disturbance are estimated between 150 m – 500 m, depending on topography). It is recommended that turbine locations should avoid the very edge of the Site development area thus minimising disturbance to breeding birds within the Site buffer.
- The skenes of geese observed commuting across the Site suggest a frequent transitional route from feeding to roosting grounds. Four of these registrations were at

collision height risk, therefore turbine location should either avoid goose flight lines or any within flight line range should have down time scheduled at high risk time periods for goose passage.

- No black grouse were recorded during the 2019 surveys, nor was any evidence of the species being present (droppings or lek sites) within the Site boundary or buffer area.
- It was noted that previous ornithological surveys have been undertaken across the area where the proposed development area is situated in, between October 2011 and April 2013 to inform the proposed Hadyard Hill extension (SSE, 2015).
- The species recorded during the year 1 survey provide a baseline for species which are regularly present within the Site and surrounding buffer and those which utilise the Site (for breeding, hunting etc). Changes in site conditions, such as the felling in the north of the Site in 2019 (Figure 7 of the Report), may result in changes in bird activity in this area.

Proposals for consultation

5.110 The assessment will be undertaken in consultation with the following stakeholders:

- South Ayrshire Council – Biodiversity Officer;
- RSPB Scotland;
- Scottish Natural Heritage; and
- South Strathclyde Raptor Study Group

Q13. Are there any other stakeholders that should be consulted as part of the ornithology assessment?

iv) Forestry

5.111 This section will provide an assessment of the impacts of the construction and operation of The Proposed Development on the commercial forest crops present on the site.

5.112 The purpose of the assessment will be to:

- Confirm the present age and species structure of the forestry crops.
- Analyse the impact of any necessary tree removal to facilitate the Proposed Development on any existing Forest Design Plan.
- Identify any measures necessary to mitigate the impact of the development on the existing forestry crops.

Approach

5.113 Existing forestry records will be analysed and augmented as required through further survey and assessment to document the full detail of the existing tree cover over the site.

Baseline

- 5.114 The Site is located within an extensive area of privately owned commercial forestry. The woodlands within the site comprise predominantly of commercial conifer species.
- 5.115 The forestry baseline will describe the crops existing at the time of preparation of the EIAR including information on species, planting year and both felling and restocking design proposals within any existing agreed Forest Plans.

Potential effects and Impact assessment

- 5.116 There is a presumption against permanent woodland removal within the UK unless it addresses other environmental concerns or delivers additional and clearly defined public benefits. The Scottish Government's "Control of Woodland Removal Policy" (2009) records the assessment requirements and compensatory measures which should be considered when removing woodland cover and the requirements under this policy will be addressed within the EIAR.
- 5.117 Areas of woodland will need to be felled for the construction and operation of the wind farm including access tracks, turbine locations and other infrastructure. Further woodland may need to be felled for wind yield and other technical reasons. The structure of the woodlands may therefore change, resulting in a potential loss of woodland area. This will be addressed through the redesign of the existing forest including, for example, the use of designed open space or alternative woodland types or the provision of compensatory woodland planting on an alternative site. It is currently anticipated that keyhole felling will be undertaken around the turbine foundations, and existing access tracks will be utilised where possible to reduce the volume of felling.
- 5.118 Forestry Land Scotland (FLS) will be consulted on the development of the proposals relating to the restructuring of the forestry cover as a consequence of the development to ensure that the proposed changes to the existing forestry crops are appropriate and suitably address the requirements of the Control of Woodland Removal Policy.
- 5.119 The forestry proposals will be prepared in accordance with the current industry best practice and guidance including, but not limited to:
- Forestry Commission (2011): The UK Forestry Standard, The Government's Approach to Sustainable Forestry. Forestry Commission, Edinburgh;
 - Forestry Commission Scotland (2006): The Scottish Forestry Strategy. Forestry Commission, Edinburgh;
 - Forestry Commission Scotland (2009): The Scottish Government's Policy on Control of Woodland Removal. Forestry Commission, Edinburgh;
 - UKWAS (2012): The UK Woodland Assurance Standard Third Edition. UKWAS, Edinburgh; Forestry Commission Scotland (2009): The Scottish Government's Policy on Control of Woodland Removal. Forestry Commission Scotland, Edinburgh;
 - Forestry Commission (2011): Forests and Water. UK Forestry Standard Guidelines (and other guidelines in the same series). Forestry Commission, Edinburgh;

- SEPA (2014): Use of Trees Cleared to Facilitate Development on Afforested Land. Land Use Planning System SEPA Guidance Note LUPS-GUS2.

- 5.120 The forestry report will be presented within a chapter of the EIAR and the principal output will be the preparation of a Forest Plan documenting the timing and extent of area of woodland to be felled during the life of the Proposed Development. It will also include restocking proposals to illustrate areas which would be replanted during the life of the wind farm.
- 5.121 The changes to the woodland structure will be analysed and described in relation to species composition, age class structure, commercial timber production etc. with supporting text, tables, diagrams and maps as necessary.
- 5.122 Any wider effects of forest felling and restocking will be assessed in the relevant chapters of the EIAR as described in the other sections of this document.

v) Socio Economics

- 5.123 There are no recognised standards or methodologies for assessing the socio-economic, recreation and tourism effects of windfarms, and therefore the Study Areas will be defined based on professional judgement. The local level Study Area will comprise the administrative boundary of South Ayrshire Council and Scotland will comprise the regional level.
- 5.124 Socio-economic impacts associated with wind farm developments primarily relate to job creation, use of local services and income spent in the locality of a project. This section of the EIAR will consider the likely impacts of the proposal on the economic profile of the area, including short term job opportunities and any adverse effects.

Baseline

- 5.125 The baseline description will cover the following topic areas:
- Demographic and labour market characteristics (covering the occupational profile and the availability of skills within the labour force);
 - employment, economic activity and unemployment trends;
 - business demography: the number, size profile and sectoral representation of the business base, including the tourism sector and construction;
 - recreational assets such as long distance routes and other local attractions and businesses that depend on visitors such as accommodation businesses;
 - large scale outdoor events that are likely to introduce more visitors to the area; and
 - land use, including public access.

Proposed Scope of Assessment

- 5.126 The EIAR will consider the effects of the Proposed Development on employment and the economy. This will include the employment opportunities for local suppliers with relevant construction and maintenance experience during the construction and operational phases of the development. The EIAR will focus on short and long term employment

opportunities and input from the Proposed Development into the local economy (expenditure in shops / local services etc).

- 5.127 A review of local, regional and national socio-economic, recreation and tourism planning policies, legislations and strategies will be undertaken and considered as part of the EIAR. Socio-economic, recreation and tourism effects will be assessed for both the construction and operational phases of the Proposed Development.
- 5.128 It is anticipated that a Construction Method Statement (CMS) would be prepared and agreed with stakeholders prior to the commencement of development. The CMS would include public notices that would be issued prior to the construction and maintenance works to inform local residents, recreational users and businesses of dates and duration of works.

Methodology

- 5.129 A baseline study will be undertaken to identify the socio-economic characteristics of the local area along with any recreational receptors. This will include a review of the scale and nature of any potential economic spin-off for local businesses, employment opportunities etc. which arise from the proposal and effects on industries which rely on tourism and recreation.
- 5.130 The level of significance of an effect will take into account the sensitivity of the receptor and the magnitude of impact. The assessment will take account of the qualitative 'sensitivity' of each receptor and their ability to respond to change. The magnitude of impact will consider the size of the impact on receptors in the context of the area in which the effects will be experienced. The effects will be described as either beneficial, negligible, or adverse.

Potential Significant Effects

- 5.131 The Proposed Development has the potential to have beneficial and adverse effects on socio-economics, recreation and tourism. These include impacts during construction as well as during the operation of the Proposed Development in terms of generating short-term and long-term jobs and Gross Value Added (GVA) contributions.
- 5.132 There is the potential for temporary adverse effects on tourism and recreation during construction and also during any operational maintenance works of the Proposed Development. The construction and operation of the Proposed Development could affect accessibility and the amenity of tourist attractions and recreation facilities.
- 5.133 Effects on the use of recreational assets and other leisure and tourism attractions in the local area due to landscape and visual impact, traffic, noise and shadow flicker will be dealt with in the technical assessments discussed in the relevant sections.

Consultation

- 5.134 The assessment will use desk-based information sources to assess the likely effects, supplemented by consultation with stakeholders if necessary. Information to inform the baseline will be sought from various sources, including:
- SAC;

- Galloway Forest Park (Forest Enterprise Scotland);
- Ayrshire Economic Partnership;
- British Horse Society Scotland;
- Community Councils;
- Scottish Association for Country Sports;
- Scottish Rights of Way and Access Society; and
- Visit Scotland.

vi) Traffic and Transport

- 5.135 This section of the EIAR will identify the preferred route(s) for access to the Site and will consider the potential effects of traffic generated during the construction, operation and decommissioning of the wind farm, including identification of possible measures to minimise any disruption to the highway network.

Baseline

- 5.136 The study area for the traffic and transport assessment will effectively be the public highway network in the vicinity of the Site which would be used during the construction and operation of the wind farm. Data will be obtained from the Department of Transport (DT) and/or South Ayrshire Council or the most recently available data period. Annual average daily low (AAD) information will be obtained or the agreed study network, which will confirm the traffic levels including light goods vehicles (LGV) and heavy goods vehicles (HGV) along the routes. These figures will be combined with the forecast levels of construction traffic, in order to identify the impact of the Proposed Development on the study network. At locations on the agreed study network where DT traffic is unavailable a traffic count will be undertaken by a technical consultant.

Potential Effects

- 5.137 The potential effects associated with traffic and transport during construction are anticipated to be:
- The effects of construction traffic on existing traffic flows on public highways; and
 - The effects of construction traffic on the public highways and adjacent infrastructure ('wear and tear').
- 5.138 Sensitive receptors will be identified along the route and will be evaluated in relation to potential impacts of both general construction traffic and abnormal load traffic, with appropriate mitigation measures proposed.

Proposed Scope of Assessment

- 5.139 In line with the Environmental Assessment guidance (Institute of Environmental Assessment (IEA), 1993)⁷⁸, the following criteria will be adopted to identify whether links on a network should be subject to detailed assessment:

- Include traffic links where either traffic flows would increase by more than 30% or the number of HGV movements would increase by more than 30% as a result of the development; and
- Include and other specifically sensitive locations affected by traffic increases of at least 10%.

5.140 The following groups and special interests will be assessed on each link on the agreed study network in line with the IEA guidance, to determine the sensitivity of receptors:

- People at home
- People at work
- Sensitive locations – including hospitals, schools, places of worship and historical buildings
- People walking
- People cycling
- Recreational and shopping areas;
- Ecological/nature conservation sites; and
- Tourist/visitor attractions

5.141 In addition to traffic impact on the study network, the following effects will be assessed in accordance with the IEA guidance methodology:

- Severance
- Driver delay
- Pedestrian delay
- Fear and intimidation; and
- Accidents and safety

5.142 The significance of the effects on receptors will be evaluated against the IEA guidance and where possible, in line with the criteria used on other environmental topic areas covered in the EIAR. These criteria are subjective but consider the number of receptors affected, their sensitivity and the length of the period over which they will be impacted.

5.143 The scope of the assessment would be agreed in advance with the roads authority. It is proposed that the assessment would include the following key elements:

- Route Access Description – to confirm the preferred route(s) to site for the transportation of wind turbine components (abnormal loads) and other construction vehicles (heavy goods vehicles and light vehicles), together with a description of any physical works that would be required to facilitate access; and
- Impact assessment – using traffic count data for the strategic and local road networks to assess the predicted increase in vehicle numbers resulting from the Proposed Development and determine whether this increase would be significant.

5.144 We are looking at a number of options for transportation of Abnormal Loads including utilising the A77 and then onto the B7023 to access the Site from the north. These routes will be assessed further and included within the EIAR.

5.145 It is considered that the following can be scoped out of the EIA:

- The effects of operational traffic on existing traffic flows;
- The environmental effects of any physical works required to facilitate turbine component delivery; and
- The environmental effects of traffic generated by the Proposed Development during decommissioning. The volume of decommissioning-related traffic is anticipated to be less than the level experienced during the construction phase and could more accurately be estimated at a later date.

Q14. Please confirm if the above can be scoped out of further assessments.

Methodology

5.146 The traffic and transport section of the EIAR will consider baseline conditions, the transport and traffic impacts and proposed mitigation measures as appropriate. A cumulative assessment will also be undertaken as part of the EIA. The work will be undertaken in accordance with relevant transportation guidelines and standards, including:

- Institute of Environmental Assessment (now IEMA) (1993) Guidelines for the Environmental Assessment of Road Traffic; and
- Transport Assessment Guidance (Transport Scotland 2012);
- National Roads Development Guide (Society of Chief Officers of Transportation in Scotland 2017);
- Design Manual for Roads and Bridges (DMRB) (Highways England, Transport Scotland, Welsh Government & Department for Infrastructure Northern Ireland – Revised 2019).

5.147 The IEMA guidelines are intended for the assessment of the environmental impact of road traffic associated with major new developments. These guidelines are considered suitable to assess the short-term construction phase of the development.

5.148 It is not anticipated that a formal Transport Assessment (TA) will be required as TAs are not generally considered necessary for temporary construction works. The likely traffic movements associated with the operation of the wind farm are also not considered high enough to warrant a TA.

Design and Mitigation

5.149 Where significant effects are identified, measures to prevent, reduce and, where possible, offset those adverse effects will be proposed. Measures likely to be utilised include:

- Instructing abnormal loads and HGVs, including site personnel as appropriate, to use only the approved access route(s) to the Site;
- Route limiting restrictions, i.e. at school drop off and pick-ups;
- Route maintenance i.e. road sweeping, gully clearing etc;
- Temporary speed restrictions and route signing;

- No parking of construction plant, equipment and vehicles off-site on public highways; and
- Establishing a construction traffic management plan for the development which could be secured via a suitably worded planning condition.

Proposals for Consultation

5.150 The assessment will be undertaken in consultation with the following stakeholders:

- South Ayrshire Council;
- Transport Scotland;
- Ayrshire Roads Alliance; and
- Police Scotland;

vii) Noise and Vibration

Baseline

5.151 The Site is near to a number of other consented, operational and planned wind farms which will contribute to the existing noise environment to a greater or lesser extent at nearby residential properties depending on location, wind speed and wind direction. Other noise in the area is likely to be from animals and birds and from wind around trees and foliage, depending on wind speed.

Potential Effects

5.152 Noise will occur during the construction, operation and decommissioning of the Proposed Development in conjunction with that from other existing and consented wind farms in the area. The extent to which this is significant depends on the noise sources, the distance of each of the noise sources to potential receptors and the relative contribution of noise from existing sources.

5.153 Potential receptors in this case are considered to be residential properties. During the construction and decommissioning phases, the effects can be divided into noise from on-site activities and from construction traffic accessing the Site. During operation, noise is generated by the turbines as they rotate, with noise output depending on wind speed.

5.154 For on-site construction noise and operational noise at different wind speeds, the levels received at residential properties will depend on wind direction.

5.155 Vibration effects from construction activities and during operation will not be perceptible at residential properties and will be scoped out of the EIA.

Proposed Scope of Assessment

5.156 Noise emitted during the construction and decommissioning phases would be temporary and short term in nature and can be minimised through careful construction practices. Whilst it is possible that some noise may be audible at the nearest properties during the construction and decommissioning phases, the effective control of these impacts can be achieved by way of a suitable planning condition.

- 5.157 No assessment of operational traffic noise is anticipated given the low number of journeys to and on the Site for routine maintenance.
- 5.158 For operational noise, the EIAR will assess the maximum sound power level specified for a particular turbine type in order to assess a worst-case scenario. If the modelling exercise shows that sound power levels will need to be reduced to achieve acceptable noise levels at sensitive locations, then the EIAR will examine possible mitigation measures which may include the use of quieter turbines, increasing standoff distances, installing measures to monitor and, if necessary, using noise reduced modes in certain wind conditions.
- 5.159 Like all wind-related noise, operational noise from turbines increases with wind speed. The EIAR will therefore compare the existing background noise levels with the calculated predicted noise levels over the range of wind speeds expected at the Site using the methodology set down in ETSU-R-97. The wind farm will be designed to fully comply with the requirements of ETSU-R-97 and, whilst noise associated with the operation of the proposed wind turbines may be audible at some locations under certain conditions, the noise generated would be within the ETSU-R-97 and would be deemed acceptable.

Methodology

- 5.160 The Institute of Acoustics, The good practice guide (2013) details a methodology for establishing noise limits for proposed wind farm developments and these limits should not be exceeded. It requires that noise limits should be set relative to existing background noise levels at the nearest receptors and that these limits should reflect variation in both turbine source noise and background noise with wind speed. Separate noise limits apply for quiet daytime and for night time. Quiet daytime limits are chosen to protect a property's external amenity, and night time limits are chosen to prevent sleep disturbance indoors, with windows open.
- 5.161 The assessment will include predictions of likely wind turbine noise levels, based on a candidate turbine, across a range of speeds to demonstrate compliance with the noise limits.
- 5.162 Once the potential noise effects of the Proposed Development operating on its own have been determined it will be necessary to evaluate the cumulative effect when considered alongside the existing operational, consented and proposed sites. Critical to this cumulative assessment is the amount of noise which the Proposed Development would add to that from such sites. It is proposed that only locations where the Proposed Development makes a significant contribution (>1dB) need to be assessed in terms of cumulative noise impact. Once this proposed screening factor is taken into account, cumulative impact will be evaluated by comparing the overall cumulative wind farm noise level with limits agreed with the Council.
- 5.163 Assessment methodology for noise from construction work is described in BS5228. Principal noise sources during construction include track laying, excavation works, and turbine foundation works.

Design and Mitigation

- 5.164 For operational noise, the proposed turbine layout will be designed to comply with the noise limits established in accordance with ETSU-R-97.

- 5.165 There are a range of turbine makes and models that may be appropriate for the Proposed Development. The final selection of turbine is likely to follow a competitive tendering exercise once consent for the Proposed Development has been granted. The final turbine model may therefore differ from that on which the assessment is based. However, the final choice of turbine will be required to comply with the noise limits established in the ETSU-R-97 assessment.
- 5.166 For construction noise, it is unlikely that any form of mitigation will be required unless any major site access track works are required in the very close vicinity of residential properties which would normally be avoided. Normal, generic mitigation measured would be incorporated into site design by avoiding track proximity to residential properties, following good practice in construction techniques including avoiding work out of normal day-time construction hours wherever possible.

Proposals for Consultation

- 5.167 The assessment will be undertaken in consultation with the following stakeholders:
- South Ayrshire Council

viii) Other Issues

- 5.168 A single chapter will be prepared to draw together the implications of the proposed Development on other facets of the environment that have been scoped out of the EIA process, or to signpost readers to where they are dealt with within technical chapters of the EIA Report. It is anticipated that this Chapter would include discussion of the following issues:
- Radio communication and Television;
 - Aviation
 - Shadow Flicker;
 - Air and Climate; and
 - Population and Human Health.

Radio Communication and Television

- 5.169 This section of the EIAR will assess the potential effects of the Proposed Development upon established telecommunications transmissions. This will include the identification of potential interference with television and radio reception and fixed microwave communication links for mobile phones and other data transfer.

Baseline

- 5.170 The Office of Communications (Ofcom) is responsible for the licensing of two-way radio transmitters. It holds a register of most microwave links and will therefore be consulted in order to establish baseline conditions. However, because not all microwave links are published, system operators will also be individually consulted on the Proposed Development's potential to cause electromagnetic interference. The outcome of this consultation process, including any mitigation actions taken, will be detailed in the EIAR.

Potential Effects

5.171 Wind turbines can cause electromagnetic interference in two ways:

- Physical interference – where the blades of the turbine cut across an electromagnetic signal causing a 'ghosting' effect. This may affect television signals or radar; and
- Electrical interference – caused by the operation of the generator within the nacelle of the turbine. This may affect communication equipment in close proximity to the turbine.

Proposed Scope of Assessment

5.172 The assessment of potential impacts on telecommunications links will comprise a thorough consultation exercise to establish any potential impacts of the Proposed Development. Consultation has begun and will be ongoing throughout the EIA process.

5.173 With regards to the potential for interference with local television reception, it is possible for mitigation to be provided via a commitment from the developer to undertake remedial action (usually the installation of new television equipment or the repositioning of aerials) where effects have occurred. This commitment is usually secured via a planning condition.

Design and Mitigation

5.174 Microwave links are less susceptible to electromagnetic interference due to their directional nature and siting wind turbines away from any line of sight transmission paths will minimise potential interference. Where possible, any potential effects on radio-communication links will be mitigated through the turbine layout design stage by the use of exclusion zones around any link paths.

Aviation

5.175 This section of the EIAR will consider the effects of the Proposed Development upon civilian and military aviation and radars.

5.176 Any possible adverse impacts, as well as any mitigation measures required to alleviate adverse impacts will be detailed in the EIAR.

Approach

5.177 The EIAR will include a description of military and civilian aeronautical and radar issues relating to the Proposed Development.

5.178 The EIAR will present the findings of these consultations and all responses received, as well as any predicted impacts on aviation and mitigation required.

Baseline

5.179 There are a number of aviation interests in the area which will be affected by the Proposed Development. In particular, NATS En Route Ltd (NERL) operates a network of long range Air traffic Control (ATC) radars throughout the United Kingdom, one of which is located at Lowther Hill approximately to the north east. The turbines will also all be visible to the radar

at Glasgow Prestwick Airport which is located 27km to the north of the Proposed Development.

Potential Effects

- 5.180 ATC radar can be susceptible to interference from wind turbines. The height and blade movement can cause intermittent detection by radars within their operating radius. This is particularly relevant where there is a line of sight between the radar and the wind turbine development. Due to their height, wind turbines can also impact upon airports and airfields if they protrude into the safeguarding distance above and around them.

Proposed Scope of Assessment

- 5.181 The EIAR will include a description of military and civilian aeronautical and radar issues relating to the Proposed Development. Consultation will be undertaken during the development process once the location of the turbines have been finalised with appropriate interested parties.
- 5.182 The EIAR will present the findings of these consultations and all responses received, as well as any predicted impacts on aviation and mitigation required.

Shadow Flicker

Potential Effects

- 5.183 Shadow flicker is a phenomenon where, under certain combinations of geographical position and time of day, the sun may pass behind the rotors of a wind turbine and cast a shadow over neighbouring properties. When the blades rotate, the shadow flicks on and off. It only occurs inside buildings where the flicker appears through a narrow window opening.

Proposed Scope of Assessment

- 5.184 A shadow flicker assessment will be undertaken to determine the extent to which any residential or other sensitive property would be affected by shadow flicker. Any potential shadow flicker effects will be quantified using a computer model. Flicker effects are generally only expected to occur within a distance of ten rotor diameters of the wind turbines, therefore, the assessment will only consider residential properties within this distance. If there are no properties within ten rotor diameters of the final wind turbine positions then no shadow flicker assessment will be undertaken.

Design and Mitigation

- 5.185 If necessary, potential mitigation measures could include screening or the use of shadow flicker modules in the wind turbines which automatically cause them to stop operating under the conditions that would give rise to shadow flicker at a sensitive receptor. This could be secured via a suitably worded planning condition.

Air and Climate

Potential Effects

- 5.186 The principal effect on air and climate is the displacement of fossil fuels. This is quantifiable as the gains over the life of the Proposed Development against the release of carbon dioxide during construction, including any associated loss of peat and construction of road / tracks turbine bases and other infrastructure.
- 5.187 No adverse air quality impacts are anticipated from the operation of the Proposed Development.

Proposed Scope of Assessment

- 5.188 The EIA will consider the current electricity generation mix and assess the level of savings that could be made.
- 5.189 The latest guidance from the Scottish Government on calculating carbon savings from wind farms on peat will be used to determine the “pay back” time of the Proposed Development taking into account the loss of carbon from the disturbance of any peat on Site.

Design and Mitigation

- 5.190 Potential impacts on air quality from dust etc. during the construction and decommissioning phases will be addressed through standard mitigation techniques to be agreed as part of a construction environmental management plan. No further specific assessment is proposed.

Population and Human Health

- 5.191 The EIA Regulations 2017 include a requirement to assess as part of the EIA process, the potential significant effects on population and human health resulting from the proposed Development. This will be addressed in the EIA Report, as appropriate, under each of the other topic headings e.g. noise or socio-economic effects. Where no significant effects are likely these are scoped out of the assessment.

Q15: Are there any other relevant consultees who should be contacted with respect to the other environmental issues?

ix) Summary and Mitigation Schedule

- 5.192 A Schedule of Mitigation will be included in the EIAR. This Chapter will summarise the mitigation measures proposed in the preceding Chapters of the EIAR to reduce or offset the effects of the proposed Development on the environment. These are the measures that have been agreed with the relevant stakeholders and will be applied during the construction and operation of the proposed Development. A number of these measures are embedded mitigation, undertaken through good practice and would adhere to relevant legislation during all stages of the Proposed Development.

6 EIA ASSESSMENT METHODOLOGY

Introduction

- 6.1 Significant effects are predicted where important resources, or numerous sensitive receptors, could be subject to impacts of considerable magnitude. Effects are unlikely to be significant where low value non-sensitive resources, or a small number of receptors, are subject to minor impacts.
- 6.2 The methods for predicting the nature and magnitude of any potential impacts vary according to the subject area. Quantitative methods of assessment can predict values that can be compared against published thresholds and indicative criteria in Government guidance and standards. However, it is not always possible to ascribe values to environmental assessments and thus qualitative assessments are used. Such assessments rely on previous experience and professional judgement. The methodologies used for assessing each topic area will be described within the individual chapters of the EIAR.
- 6.3 The following criteria will be used to evaluate the significance of potential impacts of the Proposed Development both on its own and in combination with other developments:
- Sensitivity, importance or value of the resource or receptor;
 - Extent and magnitude of the impact;
 - Duration of the impact;
 - Nature of the impact;
 - Performance against environmental quality standards; and
 - Compatibility with environmental policies.
- 6.4 Table 6.1 illustrates how the criteria will be used to assign a level of significance to potential impacts.

Table 6.1: Significance matrix

		Magnitude of change				
		Very High	High	Medium	Low	Very Low
Sensitivity	Very High	Substantial	Substantial	Substantial / Moderate	Moderate	Moderate / Slight
	High	Substantial	Substantial	Moderate	Moderate / Slight	Slight
	Medium	Substantial / Moderate	Moderate	Moderate	Moderate / Slight	Slight
	Low	Moderate	Moderate / Slight	Moderate / Slight	Slight	Slight / No Effect
	Very Low	Moderate / Slight	Slight	Slight	Slight / No Effect	No Effect
		Significant				
		May be Significant				
		Not Significant				

- 6.5 In addition, where no topic-specific guidance / regulations exist, the descriptors of significance set out in Table 6.2 below will generally be used.

Table 6.2: Descriptors of significance

Significance Category	Typical Descriptors of Effect
Substantial	Only adverse effects are normally assigned this level of significance. They represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity. However, a serious change in a site or feature of distinct importance may also enter this category.
Moderate / Substantial	These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision-making process.
Moderate	These beneficial or adverse effects may be important but are not likely to be key decision-making factors. The cumulative effects of such issues may become a decision-making issue if leading to an increase in the overall adverse effect on a particular resource or receptor.
Slight	These beneficial or adverse effects may be raised as local issues. They are unlikely to be critical in the decision-making process but are important in enhancing the subsequent design of the project.
No Effect / Slight	No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

ElAR Structure

- 6.6 The structure of the ElAR is likely to be as set out below, subject to any changes to the scope identified through the consultation process:
- A description of the project;
 - An outline of the reasons for choosing the preferred option and the reasonable alternatives considered;
 - An outline of the planning and renewable energy policy context that is relevant to the Proposed Development;
 - Individual environmental assessment topic chapters, including:
 - Material Assets – Hydrology, hydrogeology and geology, landscape and visual amenity and archaeology and cultural heritage;
 - Biodiversity – Ecology and ornithology; and
 - Population and Human Health – Socio-economics, traffic and transport, noise and vibration, radio communication and television, aviation, shadow flicker and air and climate.
- 6.7 A description of the mitigation measures required to prevent, reduce and, where possible, offset any significant adverse effects on the environment will be set out. Enhancement measures where possible will be included along with an indication of any difficulties or uncertainties encountered in compiling the ElAR.

6.8 Each chapter of the EIAR, where practicable, will adopt a consistent format. This will ensure compliance with the EIA Regulations regarding completeness and accuracy. Where applicable each chapter will comprise an opening introduction to the topic followed by:

- Methodology, Consultation and Legislation / Policy / Guidance;
- Environmental Baseline (derived from desk studies and surveys undertaken);
- Impact Assessment (identification of the impacts and their significance);
- Mitigation (and monitoring as appropriate);
- Residual Effects (assessment of impact significance once mitigation has been incorporated); and
- Summary.

6.9 The EIAR will also include a Non-Technical Summary and supporting technical appendices including tables, figures and reports.

Mitigation

6.10 Part 2 of Schedule 4 of the EIA Regulations provides that an EIAR must contain a description of the measures envisaged in order to avoid, reduce and if possible, remedy significant adverse effects.

6.11 As outlined in the Institute of Environmental Management and Assessment (IEMA) EIA guidelines, there is a widely accepted strategy for mitigation which will be followed when considering the environmental effects of the Proposed Development. This comprises (in order of preference) avoidance, reduction, compensation and remediation. In addition, consideration will be given to providing the opportunity for enhancement.

6.12 Any mitigation proposed will be described clearly within the EIAR. The mitigation will be achievable and will be delivered through appropriate mechanisms.

7 SUMMARY

- 7.1 Energiekontor UK Ltd is evaluating the potential of land at Craiginmoddie ("the Site") for the development of a wind farm of approximately 16 turbines, including associated development such as crane pads, access tracks, a substation and temporary compound ("the Proposed Development").
- 7.2 This Scoping Report provides an outline of relevant environmental receptors that may be significantly affected by the Proposed Development and describes the information that it is envisaged will be submitted as part of an EIA. This approach enables consultees with a particular interest to identify whether any potentially significant impacts have been omitted, suggest additional mitigation measures or to comment on the suitability of the intended method of assessment of necessary.
- 7.3 Comments on the scope of the proposed EIA are invited. Should consultees be in a position to identify or provide additional relevant information concerning the existing environment or any specific local issues, this would be welcomed.

Comments

- 7.4 Consultees are invited to comment on the proposed scope of the EIA set out in this report. The key questions to consider when reviewing the environmental issues are as follows:
- Are there any potential significant impacts that have not been included?
 - Is the intended method of assessment appropriate?
 - Are there additional mitigation measures that should be considered?
 - Are there any other landscape or visual receptors and viewpoint assessment locations that should be considered in the assessment?
 - Are there any other wind energy developments which should be included or excluded from the cumulative assessment?



The Scottish Government
Energy Consents Unit

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

Craiginmoddie Wind Farm
Energiekontor UK Ltd

November 2020

CONTENTS

1	Introduction.....	<u>Page 2</u>
2	Consultation.....	<u>Page 3</u>
3	The Scoping Opinion.....	<u>Page 4</u>
4	Mitigation Measures.....	<u>Page 6</u>
5	Conclusion.....	<u>Page 6</u>
ANNEX A.....		<u>Page 8</u>
ANNEX B.....		<u>Page 88</u>

1. Introduction

This scoping opinion is issued by the Scottish Government Energy Consents Unit on behalf of Scottish Ministers to Energiekontor UK Ltd, a company incorporated under the Companies Acts with company number 04913493 and having its registered office at Beaufort Court Egg Farm Lane, Off Station Road, Kings Langley, Hertfordshire, WD4 8LR (“the company”). This is in response to a request dated 02 June 2020 for a scoping opinion under the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 in relation to the proposed Craiginmoddie Wind Farm (“the proposed development”). The request was accompanied by a scoping report.

The proposed Site (“The Site”) is located within South Ayrshire Council and consists predominantly of rough grassland ground cover and extensive areas of plantation forestry. It is proposed to erect 16 wind turbines on the Site each up to a maximum of 180m to 230m in height to blade tip. The turbines would be of a typical modern design comprising a three bladed rotor hub mounted on a rotatable nacelle (containing a gearbox and a generator), tower and foundation subject to final design. The proposed Development will lie along an undulating ridge adjacent to the existing Hadyard Hill wind farm. The existing Hadyard Hill wind farm is an operational wind farm (commissioned in 2006) comprising 52 turbines.

The site is situated in the Carrick Hills in the south-east of South Ayrshire. It lies to the north of the Stinchar Valley and the south of the Girvan Valley in an upland area comprising low to medium sized hills, where land cover mostly comprises open moorland and coniferous forestry.

The Site formed part of larger area that was subject of the Section 36 Hadyard Hill windfarm Extension (ECU 00003118) submitted by SSE in 2015, comprising of 31 turbines (subsequently reduced to 22). SSE withdrew their application prior to its determination by Scottish Ministers.

In addition to wind turbines, there will be ancillary infrastructure including:

- Site access;
- Site tracks;
- Temporary construction compound / storage area;
- Crane hardstanding's and outrigger pads;
- Transformer housings;
- High voltage and control cables;
- Substation building & Compound;
- Energy Storage Compound;
- Off-site highway works; and
- Borrow pit(s).

The Company indicates the operational life of the proposed development is not known at this time, however Scottish Ministers are likely to apply time limit to any Consent granted.

The proposed development is solely within the planning authority of South Ayrshire Council.

2. Consultation

Following the request for a scoping opinion, a list of consultees was agreed between Energiekontor UK Ltd, and the Energy Consents Unit. Scottish Ministers undertook a consultation on the scoping report and this commenced on 15 June 2020. The consultation closed on 10 November 2020.

Extensions to this deadline were granted to:

- South Ayrshire Council;
- Ayrshire Rivers Trust;
- Crosshill, Straiton and Kirkmichael Community Council;
- Dailly Community Council; and
- Defence Infrastructure Organisation.

Scottish Ministers also requested responses from their internal advisors Marine Scotland, Transport Scotland and Scottish Forestry. A full list of consultees is set out at **Annex A**.

The purpose of the consultation was to obtain scoping advice from each consultee on environmental matters within their remit. Responses from consultees and advisors 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.

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.

No responses were received from:

- Barr Community Council;
- British Horse Society;
- Civil Aviation Authority – Airspace;
- Fisheries Management Scotland;
- Galloway & Southern Ayrshire Biosphere;
- John Muir Trust;
- Network Rail;
- Scottish Wild Land Group (SWLG);
- Scottish Wildlife Trust;
- South Ayrshire Council (three internal advisor's advice provided on landscape & visual, noise and environmental health)
- Stinchar District Salmon Fisheries Board;
- Visit Scotland; and
- West of Scotland Archaeology Service.

With regard to those consultees who did not respond, it is assumed 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 the Environmental Impact Assessment scoping opinion.

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

This scoping opinion had been adopted following consultation with the relevant planning authority, South Ayrshire Council, within whose area the proposed development would be situated. Scottish Ministers to date have not received South Ayrshire Council's formal response to the scoping however have been provided with comments from three of South Ayrshire Council's internal advisors on landscape and visual matters, noise and environmental health. Any further comments received from South Ayrshire Council will be forwarded to the company.

Scottish Environment Protection Agency ("SEPA"), Scottish Natural Heritage ("SNH") and Historic Environment Scotland ("HES"), were also consulted as statutory consultation bodies, as were other bodies, which Scottish Ministers considered likely to have an interest in the proposed development by reason of their specific environmental responsibilities or local and regional competencies.

Scottish Ministers adopt this scoping opinion having taken into account the information provided by the applicant in its request dated 02 June 2020 in respect of 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.

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

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**.

Scottish Ministers are satisfied with the scope of the EIA set out at Chapter 6 of the scoping report.

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.

The proposed development set out in the Scoping Report refers to wind turbines, and grid technologies including battery storage and/or 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

Scottish Ministers request that the Company contacts Scottish Water and makes further enquires and includes details in the EIA report of any relevant mitigation measures provided.

Scottish Ministers request that the Company investigate private water supplies within close proximity to the proposed development, which may be impacted by the development. The EIA report should include details of these supplies identified by this investigation, the Company should provide an assessment of the potential impact, risks, and any mitigation which would be provided.

Scottish Ministers consider that where there is a demonstrable requirement for peat landslide hazard risk assessment, the assessment should be 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 assessment and details of mitigation measures.

It is recommended by the Scottish Ministers that the final list of viewpoints and visualisations should be agreed following discussion between the Company, South Ayrshire Council, Historic Environment Scotland and Scottish Natural Heritage. At this stage we would advise that the additional viewpoints as requested by South Ayrshire Council are included.

Scottish Ministers request the Company takes account of the advice provided by Marine Scotland Science (MSS) and please see the points raised in the response on Annex A32 – A33 and contact Girvan District Salmon Fishery Board and Stinchar Salmon Fishery Board and Ayrshire Rivers Trust for information on local fish stocks.

Since their response MSS now provide generic scoping guidelines for both onshore wind farm and overhead line development 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. <https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren>)

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.

MSS also provide standing advice for onshore wind farms which has been appended at **Annex B** A88 – A96 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.

Aviation Lighting may be required due to the proposed scale and location of turbines. Further advice on aviation lighting is available from NatureScot. Scottish Ministers request the Company takes account of the advice provided by NatureScot and Defence Infrastructure Organisation and please see the points raised in the response at Annex A20 – A22.

Scottish Ministers request the Company takes account of the advice provided by Accon UK Environmental Consultants on behalf of South Ayrshire Council and please see the points raised in the response on Annex A1- A15. The noise assessment should be carried out in line with relevant legislation and standards as detailed in Chapter 5 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”.

Scottish 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, finalisation of viewpoints, transport routes, cultural heritage, designated sites and cumulative assessments and they request that they are kept informed of relevant discussions.

4. Mitigation Measures

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 EIA. 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, in tabular form, of all mitigation measures proposed in the environmental assessment, where that mitigation is relied upon in relation to reported conclusions of likelihood or significant of impacts.

5. Conclusion

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 other application for section 36 consent for the proposed development.

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.

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.

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 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.

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

Applicants are reminded that there will be limited opportunity to materially vary the form and consent of the proposed development once an application is submitted.

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.

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 size no more than 10 megabytes (MB). In addition, a separate disc containing the EIA report and its associated documentation in electronic format will be required.

Carolanne Brown
Energy Consents Unit
November 2020

ANNEX A

Consultation

List of consultees

South Ayrshire Council	A1 – A15
Ayrshire River Trust	A16 – A17
British Horse Society;*	
BT;	A18
Civil Aviation Authority – Airspace;*	
Crown Estate Scotland;	A19
Defence Infrastructure Organisation;	A20 – A22
Fisheries Management Scotland;*	
Galloway & Southern Ayrshire Biosphere;*	
Glasgow Airport;	A23
Glasgow Prestwick Airport;	A24 – A25
Historic Environment Scotland (HES);	A26 – A29
John Muir Trust;*	
Joint Radio Company;	A30 – A31
Marine Scotland;	A32 – A33
Mountaineering Scotland;	A34 – A35
NATS Safeguarding;	A36
Nature Scotland;	A53 – A65
Network Rail;*	
RSPB Scotland;	A37
Scottish Environment Protection Agency (SEPA);	A45 – A52
Scottish Forestry;	A38 – A39
Scottish Rights of Way and Access Society (ScotWays);	A44
Scottish Water;	A40 – A43
Scottish Wild Land Group (SWLG);*	
Scottish Wildlife Trust;*	
Stinchard District Salmon Fisheries Board;*	
Transport Scotland;	A66 – A67
Visit Scotland; and*	
West of Scotland Archaeology Service.*	
Barr Community Council;*	
Crosshill, Straiton and Kirkmichael Community Council; and	A68 – A74
Dailly Community Council.	A75 – A87

Officials from Marine Science Scotland Transport Scotland and Scottish Forestry areas of the Scottish Government provided internal advice.

*No consultee responses were received.

South Ayrshire Council - *internal advisor's advice provided on landscape & visual, noise and environmental health*

Craiginmoddie Wind Farm – Scoping response on landscape and visual matters

October 7th 2020

The Scoping Report sets out the methodology and scope of the Landscape and Visual Impact Assessment (LVIA). I am in agreement with the methodology to be adopted for the LVIA and with the Study Area being defined as 45km from the proposal with a particular focus on an area within 20km of the wind farm where significant adverse landscape and visual impacts are most likely to occur.

The proposed development site largely lies in an area of forest. There is no mention of forestry removal, management and compensatory planting in paragraph 3.10 of the Scoping Report describing the proposal. Detailed consideration should be given to the landscape and visual effects of felling and restocking proposals (both adverse and beneficial) in the LVIA and mitigation and landscape enhancement should be optimised in the design of any Wind Farm Forest Plan and/or compensatory planting. Proposed forest felling areas should be shown in relevant visualisations from nearby viewpoints.

I am in agreement with the stated scope of the LVIA in respect of assessing effects on landscape character and the Merrick WLA. Update is, however, needed on local landscape designations in South Ayrshire. The Scenic Area designation has been replaced by Local Landscape Areas and potential effects should be considered in detail on the special qualities and character of the Water of Girvan Valley, the Stinchar Valley and the High Carrick Hills LLAs. Citations and boundaries for these LLAs are available from South Ayrshire Council.

I note that the ZTV included with the Scoping Report is based on turbines 230m high to blade tip. A more detailed ZTV should be provided in the EIA-R based on an OS 1:50,000 scale map base within 15km of the proposal to allow more accurate appraisal of potential visibility. The representative viewpoints shown on the ZTV and listed in the Scoping Report should be supplemented with additional viewpoints from:

- The minor road between Straiton and Tairlaw within the Upper Girvan Valley (to assess potential effects on views and on the Girvan Valley LLA)
- The B741 west of the Ladyburn junction in the Girvan Valley (to assess potential effects on views to Kilkerran House and its Inventory listed Garden and Designed Landscape and to inform the assessment of effects on the Water of Girvan LLA)

It may not be necessary to consider both Viewpoints 2 and 5 in the LVIA as these are likely to be similar in nature although this should be tested by wireline visualisations. Consideration should be given to visibility and key views from the Barr Trails recreational routes in the Stinchar Valley.

Lighting effects should be assessed from each of the representative viewpoints and not just from the viewpoints selected to illustrate night-time effects. Effects on the Dark Sky Park should be additionally assessed. While the character of the landscape is not readily discernible during hours of darkness, lighting can affect perceptual qualities associated with landscape character and it is recommended that the effect on the sense of seclusion and naturalness (due to existing low lighting levels) are considered in the LVIA. These qualities should be addressed even if the viewpoint does not lie within the Dark Sky Park Core Area. The cumulative effects of lighting should be considered in relation to the nearby Clauchrie and Carrick wind farm proposals.

Other proposed wind farm developments to be considered in the cumulative LVIA should be confirmed with South Ayrshire Council once an assessment cut-off date has been established.

Flaherty D (Debbie)

From: Steve Summers <steve.summers@accon-uk.com>
Sent: 30 September 2020 17:12
To: Edgar, Alan
Cc: Cooke, Austin
Subject: RE: Craiginmoddie Wind Farm Scoping Report

Hi Alan,

Our advice is as follows:

The proposed development site lies to the south of Straiton and immediately to the east of the existing Hadyard Hill wind farm. The closest proposed turbines are approximately 0.5 km from turbines forming part of the Hadyard Hill development.

In line with Scottish Government policy, the Scoping Report states that the operational noise assessment would follow the requirements of ETSU-R-97 and take account of 'A Good Practice Guidance to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' (IOA GPG) published by the IOA. The assessment should also take account of 'Wind Turbine Development: Submission Guidance Note' (SGN) issued by South Ayrshire Council Environmental Health. The Scoping Report comments that there are a number of existing operational, consented and proposed wind farms in the vicinity of the development that will need to be considered as part of a cumulative assessment of wind turbine noise and proposes that only other wind farms that make 'a *significant (>1dB) contribution need to be assessed in terms of cumulative noise impact*'. This is at slight variance with the IOA GPG which advises that if predicted noise levels of another wind farm are within 10 dB of the predicted level of the proposed wind farm, then the other wind farm should be included in the cumulative assessment. It is therefore recommended that the noise assessment should follow the IOA GPG guidance on this matter. ACCON also note that the noise section of the Scoping Report has not at this stage identified the likely other existing operational, consented and proposed wind farms to be considered in the cumulative assessment.

At paragraph 5.160 noise limits applying to night-time and quiet daytime are discussed. The applicants should note that ETSU-R-97 methodology requires background noise survey data to be used to derive daytime noise limits. However, the noise limits derived in this way are subsequently applied in planning conditions to the usual daytime period of 07:00 to 23:00, not just the quiet daytime periods defined in ETSU-R-97.

The applicants should note that the planning consent for the Hadyard Hill wind farm includes a daytime noise limit of 38 dB L_{A90} for properties without a financial involvement in the wind farm. This daytime noise limit has subsequently been interpreted as a fixed minimum limit. That is, daytime noise levels are limited to 38 dB L_{A90} or the background noise level plus 5 dB, whichever is the higher. When the Hadyard Hill Extension wind farm was under consideration, this noise limit was adopted as a cumulative daytime noise limit. Taking the same approach to the cumulative noise limits for the Craiginmoddie wind farm would be recommended in order to protect the amenity of residents living nearby.

It is expected that noise measurement surveys will be necessary to obtain background noise levels for the wind turbine noise assessment. The applicant's acoustic consultants should consult with SAC on the proposed noise monitoring locations. In place of contacting the Environmental Health team, the Council's preferred approach for this is to submit proposals for noise monitoring to the Planning Officer so that the Council's consultants (ACCON) can advise on the suitability of the proposals. It is likely that directional filtering of noise monitoring data will be required when processing noise survey data given the proximity of other wind farms, in particular Hadyard Hill.

Noise from operational road traffic is considered unlikely to result in any significant effects according to the Scoping Report. ACCON agree with this point and consider that a detailed assessment of this aspect can be scoped out of the noise assessment.

The Scoping Report identifies correctly that noise from construction of the proposed development should be considered utilising the guidance in BS 5228 'Code of practice for noise and vibration control on construction and open sites'. ACCON advise that should the proposals include blasting for borrow pits, the potential effects of vibration and air over-pressure from these operations would need to be addressed.

Regards,
Steve

Steve Summers
Associate Director



EIA • Noise • Vibration • Air Quality • Lighting • Ecology

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Planning Application Consultation

A4

Environmental Health Reference:	
Planning Application Reference:	Ecu Reference - ECU00002080
Planning Case Officer:	Alan Edgar Email: Alan.edgar@south-ayrshire.gov.uk
Name/Address of Applicant:	Alan Edgar
Address of Proposed Works:	Proposed Craiginmoddie Windfarm Scoping Report South Ayrshire
Nature of Proposed Works:	I refer to the above proposal and to your Service's consultation response which was received on 26th June. Connie and I had a discussion this morning and we have noted that there will likely be issues arising in respect to PWS. It would be very helpful if you could advise on what issues are and how you would wish to see them investigated through the EIA process. Details of the proposed wind farm are available on the Energy Consents Units website. The easiest way to find the details is to type "Craiginmoddie" into the search bar. As I explained to Connie, I have managed to agree a further extension from yesterday until the 15th September 2020, and would be very grateful if you are able to provide the PWS advice early next week.
Date Received:	03.07.2020

OBSERVATIONS:

Existing Premises & Locality:	
Proposals:	

Implications:	NOISE	PRIVATE WATER SUPPLIES	PRIVATE WATER SOURCES
	POLLUTION	LIGHT POLLUTION	
Additional Comments:	Environmental Health Standard Conditions with specific PWS points from C Lobban Where Acoustic Consultant Procured by SAC Private Water Supplies/Operational Noise/Shadow Flicker		

1. Impact on Water - PRIVATE WATER SUPPLIES

The development should not adversely affect the private water supplies in the area (The Private Water Supplies (Scotland) Regulations 2006 and the Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017.) The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017 The Housing Act 1987 Sect. 86, The Water (Scotland) Act 1980 (The Act), Protecting private water supplies during forestry activities – Guidance

www.Forestrywaterscotland.com

A report is required detailing how existing supplies will be maintained both qualitatively and quantitatively and sources and connections not adversely affected.

a) Prior to the commencement of works on the site, a water management plan covering water control and the means of drainage from all hard surfaces and structures within the site shall be submitted for approval of the planning authority and following approval shall be implemented by the company. For the purposes of this condition “hard surfaces” includes internal access tracks, construction and lay-down areas, turbine pads and crane pads. The details to be submitted shall include the means of protecting surface water and ground water and controlling surface water run-off. The management plan as approved shall then be implemented in full.

Reason: To minimise impacts on groundwater quality and hydrology.

b) The applicant shall submit to the planning authority a site-specific hydrogeological report (not desk top study), which contains a review of the risks to all private water sources, their catchment areas, and the supplies, that have the potential to be affected by the development. Work shall not commence on site prior to the written approval of the Planning Authority being obtained.

The report should include a field assessment of all private water sources and supplies and their catchment areas, and focus on the effects of the development on the quality and quantity of water supplied to all private water users both within and out-with the boundary of the proposed site that have the potential to be affected by the development.

A conceptual site model should be included as this is key to developing a robust assessment of all risks to all potentially affected private water supplies. Attention should also be given to possible leachate generation at any Borrow Pit excavations.

c) Forestry – Removal, Harvesting, Replanting, Compensatory Planting:

All Private Water Supply user properties, their Private Water Supply source uptakes and

catchment areas to be identified and shown as marked on maps, to scale, on minimum of 1:25000, in order to assess risk to catchment areas of the sources drawn from. This is to give realistic comparison to the siting's of the proposed construction, turbines, structures, over ground / underground, access tracks etc.

d) Emergency Action Plan

An EAP should be submitted stating clearly who would be responsible, when they would be required to take action, where this would be implemented and what action and mitigation will be implemented for any emergencies arising. The EAP should detail who the emergency contacts would be 24/7, with contact telephone numbers and email addresses, to be provided to PWS users and South Ayrshire council planning department.

Reason: In order to maintain a secure and adequate quality water supply to all properties with private water supplies that may be affected by the development.

Reason: To minimise impacts on groundwater quality and hydrology.

e) Specific concerns relating to private water supplies are as follows:

Following perusal of these plans the comments and representations I would advise that:

The Water Intended for Human Consumption (Private Supplies) (Scotland) Regulations 2017

The Private Water Supplies (Scotland) Regulations 2006

The Water Supply (Water Quality) (Scotland) Regulations 2001

Protecting private water supplies during forestry activities – Guidance

www.forestrywaterscotland.com

The Housing (Scotland) Act 1987 – section 86

I have read through the scoping submission for Craiginmoddie Wind Farm, and am of the opinion that not enough information has been provided, and ask for further information to be provided.

I note that the application is “in perpetuity” and that the marked boundary of the site goes beyond the relative areas of the proposed turbines.

This would mean permission without time limit, with possible and potential upgrades, removal and installation in the future, which in turn would create further construction works, etc.

This could pose the potential to have adverse and possible irreversible effects, and be unacceptable or incompatible with Private Water Supplies and their often wide catchment areas feeds.

There is no clear indication of the proposed access entry route from roads to the proposed Craiginmoddie wind farm site, and no clear indications of where the proposed internal upgraded and new access roads will be.

There is no clear indication of proposed sites for borrow pits (quarries), or for water crossings that could have potential impact in catchment areas for private water supplies situated just out with the marked boundary on the provided map.

There is no clear indication of placement of proposed future construction of buildings, for example to house energy storage, etc.

In short, there is not enough detailed information provided.

South Ayrshire Council Environmental Health Department are the enforcing agency for

Private Water Legislation within South Ayrshire council local authority. Under the above legislation landowners, contractors and persons have Duty of Care under the above Regulations, which state “that a person must not take any action which has the effect of allowing deterioration of the quality of the water”, this being Regulation 16, and non-compliance is an offence, and enforcement action can be taken.

There are habited land areas within South Ayrshire Council Authority boundaries that do not, and probably never will have the opportunity to access mains water.

I note there may be such as along the Stinchar Valley, what appears to be several catchment areas which potentially feed the source uptakes lying within the marked boundary area, potentially supplying feeds which then supply the private water properties lying on or just outside the marked boundary.

I note that a number of the proposed turbines sites are on or very close to the marked boundary, and as such, a 1km buffer zone from the boundary is not sufficient to ensure the safety of private water supply.

Buffer zones around potential catchments for private water supply sources must ensure there is no potential for pollution or disruption. They must be of adequate distance to ensure this. This is imperative when operations are planned on terrain such as is described in this scoping report, such as steep sided gradients, narrow deep valleys, or side wash or water displacement, contaminated water runoff downhill potential from ground bog flow, for example. Drought is now also becoming a serious issue for private water supplies across Scotland at certain times of the year.

I require proof that problems will not occur due to introduced construction or forestry operations, and wind farm operations, such as further information on which private water supplies, sources, catchment areas for those sources, and properties that have been identified by the company which have the potential to be affected by forestry operations, and construction of the entrance supply road, upgrade of the access road/s into and within the proposed windfarm. This would also be considered as part of drought conditions related to private water supplies.

I require proof that problems will not occur, or be further compounded by the proximity to further or existing windfarms such as Carrick, Hadyard Hill, etc.

The above list of points are not exhaustive or finite in observations.

Prior to planning consent being granted the following comments and representations should be complied with to satisfy Environmental Health:

2. Shadow Flicker

Following a complaint to the Planning Authority the applicant will appoint a suitably qualified person to the satisfaction of the Local Authority, who will undertake an investigation into the incidence of shadow flicker at the compliant location. Where shadow flicker is confirmed to result in loss of amenity, then mitigation measures require to be implemented, to the satisfaction of the Local Authority.

Reason: to prevent nuisance to residents from shadow flicker

3. Construction Noise

a. Prior to the commencement of works on site, the company shall submit to the planning authority a management plan for minimising the emission of dust from the construction and operation of the development hereby authorised. The dust management

plan shall specify the following matters and, after its approval shall be implemented in full by the Company:-

- The water spraying of all internal roads and stockpiles of materials to suppress dust in periods of prolonged dry weather;
- The means to ensure that an adequate water supply is available at all times for dust suppression purposes;
- The operation of the site so as to ensure that adequate steps are taken at all times to minimise dust propagation from un-surfaced access tracks within the site.

Reason: To minimise dust to nearby residents.

c. Prior to the commencement of the development the company shall submit to the planning authority an assessment of the effects of the development on the quantity and quality of water supplied to all properties with private water supplies that may be affected by the development. Thereafter, any mitigation measures as identified in the risk assessment shall be implemented and agreed by the planning authority in order to maintain a secure and adequate quality of water supply to all properties with private water supplies that may be affected by the development.

Reason: In order to maintain a secure and adequate water supply to all properties with private water supplies that may be affected by the development.

d. Construction works require to be carried out in accordance the approved Code of Practice BS 5228-1 and 2:2009 Noise and Vibration Control on Construction and Open Sites or any subsequent code amending consolidating or replacing it as approved by the Secretary of State pursuant to Sections 71(2) and 104 of the Control of Pollution Act 1974.

As the development is in an area of existing low ambient noise levels and the construction activities continue for more than 1 month the following minimum criteria are applicable:-

Assessment category and threshold value period (LAeq) Threshold value in decibels (dB),

Category A

Night time (23.00-07.00) 45

Evenings and Weekends* 55

Daytime (07.00-19.00) and Saturdays (07.00-13.00) 65

*19.00-2300 weekdays, 1300-23.00 Saturdays and 07.00-23.00 Sundays. 5228-1

Annex E.

e. Prior to any works being undertaken a detailed method statement for the construction project will require to be undertaken for approval by South Ayrshire Council Planning Department. This shall 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.

The site contractors shall conduct all site operations in accordance with accredited documented procedures. This shall include a site complaint investigation procedure.

f. No Blasting shall take place until a monitoring scheme to address borrow pit blasting has been submitted to South Ayrshire Council and received the written approval of, the planning authority. The scheme shall be implemented as approved in writing by the planning authority. The scheme shall make provision for:

- Blasting monitoring locations (Nearest noise/vibration sensitive properties)**
- Type of monitoring equipment to be used;**
- Frequency of monitoring.**
- The methods to be employed to minimise the effects of overpressure arising from blasting, having regard to blast design, methods of initiation and the weather conditions prevailing at the time;**
- Limits of overpressure levels at specified properties; and**
- Submission of blasting records to the planning authority.**

Reason: To minimise disturbance to residents from noise and vibration.

g. No blasting shall take place except between the following times:-

- 10:00 – 12:00 and 14:00 – 16:00 Mondays to Fridays**
- 10:00 – 12:00 Saturdays**

Reason: To minimise disturbance to local residents.

h. Ground vibration from the blasting shall not exceed a peak particle velocity of 6mm /second at the blasting monitoring locations identified for condition 6 above. The measurement to be the maximum of three mutually perpendicular directions taken at the ground surface.

Reason: To minimise disturbance to residents in the vicinity of the wind farm.

4. Operational Noise

Operational Noise Levels:

This part of the ES is to be assessed by a 3rd party consultant and their findings suitably

Complaint Procedure

- a) Within 21 days from receipt of a written request from the Local Planning Authority following a complaint to it from an occupant of a dwelling alleging noise disturbance at that dwelling, the wind farm operator shall, at its expense, employ a consultant approved by the Local Planning Authority to assess the level of noise immissions from the wind farm at the complainant's property in accordance with the procedures described in the attached Guidance Notes. The written request from the Local Planning Authority shall set out at least the date, time and location that the complaint relates to and any identified atmospheric conditions, including wind direction, and include a statement as to whether, in the opinion of the Local Planning Authority, the noise giving rise to the complaint contains or is likely to contain a tonal component.
- b) The assessment of the rating level of noise immissions shall be undertaken in accordance with an assessment protocol that shall previously have been submitted to and approved in writing by the Local Planning Authority. The protocol shall include the proposed measurement location identified in accordance with the Guidance Notes where measurements for compliance checking purposes shall be undertaken, whether noise giving rise to the complaint contains or is likely to contain a tonal component, and also the range of meteorological and operational conditions (which shall include the range of wind speeds, wind directions, power generation and times of day) to determine the assessment of rating level of noise immisions. The proposed range of conditions shall be those which prevailed during times when the complainant alleges there was disturbance due to noise, having regard to the written request of the Local Planning Authority under paragraph (c), and such others as the independent consultant considers likely to result in a breach of the noise limits.
- c) Where a dwelling to which a complaint is related has not previously had noise limits assigned against it, the wind farm operator shall submit to the Local Planning Authority for written approval proposed noise limits selected from another property which has had noise limits assigned to it to be adopted at the complainant's dwelling for compliance checking purposes. The proposed noise limits are to be those limits selected from a listed location which the independent consultant considers as being likely to experience the most similar background noise environment to that experienced at the

complainant's swelling. The rating level of noise immissions resulting from the combined effects of the wind turbines when determined in accordance with the attached Guidance Notes shall not exceed the noise limits approved in writing by the Local Planning Authority for the complainant's dwelling.

d) The wind farm operator shall provide to the Local Planning Authority the independent consultant's assessment of the rating level of noise immissions undertaken in accordance with the Guidance Notes within 2 months of the date of the written request of the Local Planning Authority for compliance measurements to be made under paragraph (c), unless the time limit is extended in writing by the Local Planning Authority. The assessment shall include all data collected for the purposes of undertaking the compliance measurements, such data to be provided in the format set on in Guidance Note 1(e) of the Guidance Notes. The instrumentation used to undertake the measurements shall be calibrated in accordance with Guidance Note 1(a) and certificates of calibration shall be submitted to the Local Planning Authority with the independent consultant's assessment of the rating level of noise immissions.

e) Where a further assessment of the rating level of noise immissions from the wind farm is required pursuant to Guidance Note 4(c), the wind farm operator shall submit a copy of the further assessment within 21 days of submission of the independent consultant's assessment pursuant to paragraph (d) above unless the time limit has been extended in writing by the Local Planning Authority.

f) The rating level of noise immissions from the combined effects of the wind turbines (including the application of any tonal penalty) when determined in accordance with the accompanying guidance notes (to this condition) shall not exceed the values for the relevant integer wind speed set out in, or derived from the table below at any dwelling which is lawfully existing or has planning permission at the date of this permission.

Guidance Notes for Noise Conditions

These notes are to be read with and form part of the noise conditions. They further explain the conditions and specify the methods to be deployed in the assessment of complaints about noise immissions from the wind farm. The rating level at each integer wind speed is the arithmetic sum of the wind farm noise level as determined from the best-fit curve described in Note 2 of these Guidance Notes and any tonal penalty applied in accordance with Note 3. Reference to ETSU-R-97 refers to the publication entitled "The

Assessment and Rating of Noise from Wind Farms” (1997) published by the Energy Technology Support unit (ETSU) for the Department of Trade and Industry (DTI).

Measured noise imission levels from the turbines must be referenced to standardised 10 metres height wind speeds.

Guidance Note 1

- (a) Values of the LA90,10-minute noise index should be measured at the complainant’s property, using a sound level meter of EN 60651/BS EN 60804 Type 1, or BS EN 61672 Class 1 quality (or the equivalent UK adopted standard in force at the time of the measurements) set to measure using the fast time weighted response as specified in BS EN 60651/BS EN 60804 or BS EN 61672-1 (or the equivalent UK adopted standard in force at the time of the measurements). This should be calibrated in accordance with the procedure specified in BS 4142: 1997 (or the equivalent UK adopted standard in force at the time of the measurements). If required, measurements shall be undertaken in such a manner to enable a tonal penalty to be applied in accordance with Guidance Note 3.**
- (b) The microphone should be mounted at 1.2 - 1.5 metres above ground level, fitted with a two-layer windshield or suitable equivalent approved in writing by the Local Planning Authority, and placed outside the complainant’s dwelling. Measurements should be made in “free field” conditions. To achieve this, the microphone should be placed at least 3.5 metres away from the building facade or any reflecting surface except the ground at the approved measurement location. In the event that the consent of the complainant for access to his or her property to undertake compliance measurements is withheld, the wind farm operator shall notify the Local Planning Authority in writing that access has been denied.**
- (c) The LA90,10-minute measurements should be synchronised with measurements of the 10-minute arithmetic average wind speed, standardised to a height of 10 metres at the wind farm site, and with operational data logged in accordance with Guidance Note 1(d), including the power generation data from the turbine control systems of the wind farm.**
- (d) To enable compliance with the conditions to be evaluated, the wind farm operator shall continuously log arithmetic mean wind speed in metres per second (m/s), arithmetic mean wind direction in degrees from north in each successive 10-minute periods from the supervisory control and data acquisition (SCADA) system to enable compliance with the conditions to be evaluated. Wind speed data shall also be standardised to a 10 meters height. It is this standardised 10 metre height wind speed data which is correlated with the noise measurements determined as valid in accordance with Note 2(b), such**

correlation to be undertaken in the manner described in Note 2(c). In addition, the wind farm operator shall continuously log the arithmetic mean power generated during each successive 10-minutes period for each wind turbine on the wind farm. All 10-minute periods shall commence on the hour and in 10-minute increments thereafter synchronised with Greenwich Mean Time.

(e) Data provided to the Local Planning Authority in accordance with the noise condition shall be provided in comma separated values in electronic format.

Guidance Note 2

(a) The noise measurements should be made so as to provide not less than 20 valid data points as defined in Note 2 paragraph (b).

(b) Valid data points are those measured in the conditions set out in the assessment protocol approved by the Local Planning Authority under Condition 3 of the noise condition but excluding any periods of rainfall measured at the complainants dwelling.

(c) Values of the LA90,10-minute noise measurements and corresponding values of the measured 10-minute standardised 10-metre height wind speed for those data points considered valid in accordance with Note 2 paragraph (b) shall be plotted on an XY chart with noise level on the Y-axis and wind speed on the X-axis. A least squares best fit curve of an order deemed appropriate by the independent consultant (but which may not be higher than a fourth order) should be fitted to the data points and define the wind farm noise level at each integer speed.

Guidance Note 3

(a) Where in accordance with the approved assessment protocol under condition 3, noise imissions at the location or locations where compliance measurements are being undertaken contain or are likely to contain a tonal component, a tonal penalty is to be calculated and applied using the following rating procedure.

(b) For each 10-minute interval for which LA90,10-minute data have been determined as valid in accordance with Note 2 a tonal assessment shall be performed on noise imissions during 2 minutes of each 10-minute period. The 2-minute periods should be spaced at 10-minute intervals provided that uninterrupted uncorrupted data are available ("the standard procedure"). Where uncorrupted data are not available, the first available uninterrupted clean 2-minute period out of the affected overall 10-minute period shall be selected. Any such deviations from standard procedure shall be reported.

(c) For each of the 2-minute samples the tone level above audibility , shall be

calculated by comparison with the audibility criterion given in Section 2.1 on pages 104 - 109 of ETSU-R-97 or future equivalent guidance for wind farm tonal noise assessment.

(d) The tonal level above audibility shall be plotted against wind speed for each of the 2-minute samples. Samples for which the tones were below the audibility criterion or no tone was identified, a value of zero audibility shall be substituted.

(e) A least squares best fit linear regression shall then be performed to establish the average tone level above audibility for each integer wind speed derived from the value of the “best fit” line fitted to values within $\pm 0.5\text{m/s}$ of each integer wind speed. If there is no apparent trend with wind speed then a simple arithmetic mean shall be used. This process shall be repeated for each integer wind speed for which there is an assessment of overall levels in Note 2.

(f) The tonal penalty is derived from the margin above audibility of the tone according to the figure below.

Guidance Note 4

(a) If a tonal penalty is to be applied in accordance with Note 3 the rating level of the turbine noise at each wind speed is the arithmetic sum of the measured noise level as determined from the best fit curve described in Note 2 and the penalty for tonal noise as derived in accordance with Note 3 above at each integer wind speed within the range set out in the approved assessment protocol under condition 3.

(b) If no tonal penalty is to be applied then the rating level of the turbine noise at each wind speed is equal to the measured noise level as determined from the best fit curve described in Note 2.

(c) In the event that the rating level is above the limit(s) set out in the Tables attached to the noise conditions or the noise limits for a complainant’s dwelling approved by the Local Authority, the independent consultant shall undertake a further assessment of the rating level to correct for background noise so that the rating level relates to wind turbine noise emission only.

(d) The wind farm operator shall ensure that all the wind turbines in the development are turned off for such period as the independent consultant or local planning authority requires undertaking the further assessment. The further assessment shall be undertaken in accordance with the following steps:

(e) Repeating the steps in Note 2, with the wind farm switched off, and determining the background noise (L3) at each integer wind speed within the range set out in the approved assessment protocol under Condition 3.

- (f) The wind farm noise (L1) at this speed shall then be calculated as follows where L2 is the measured level with turbines running but without the addition of any tonal penalty:
- (g) The rating level shall be re-calculated by adding the tonal penalty (if any is applied in accordance with Note 3) to the derived wind farm noise L1 at that integer wind speed.
- (h) If the rating level after adjustment for background noise contribution and adjustment for tonal penalty (if required in accordance with note (iii) above) at any integer wind speed lies at or below the values set out in the Tables attached to the conditions or at or below the limits approved by the Local Planning Authority for a complainants dwelling then no further action is necessary. If the rating level at any integer wind speed exceeds the values set out in the Tables attached to the conditions or the noise limits approved by the Local Planning Authority for a complainants dwelling then the development fails to comply with the conditions.

Recommendations:	
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Consultations:	Pollution Control	Light Pollution	Private Water Supplies
Others:			

Enforcement of Major Legislation	Health & Safety:	SAC	HSE
	Food Hygiene:	SAC	N/A

Attached Documents:	
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Letter to Applicant?	YES	NO
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Template:						Memo 6 Windfarms
Officer Name:	Connie Lobban, Enforcement Officer		Environmental Health South Ayrshire Council		Date: 01 September 2020	
	Matt Smith, Environmental Health Officer					



Ayrshire Rivers Trust
working to improve Ayrshire's rivers and lochs

20 CELEBRATING 20
YEARS
2000-2020

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

7th July 2020

Dear Sirs,

Re: Craiginmoddie Wind Farm Scoping Report

On behalf of the Ayrshire Rivers Trust (ART) and the River Stinchar District Salmon Fishery Board (DSFB) and River Girvan DSFB we would like to make the following comments on the above Scoping Report. Our comments relate only to the water environment and riparian habitat and take no account of other potential impacts. The proposed wind farm development has the potential to impact on the water environment due to its close proximity to important tributaries of the River Stinchar and River Girvan. We therefore ask you consider the following comments.

Q11: Do you agree with the conclusions and recommendations of the ecology Reports summarised above?

We agree that fish surveys should be repeated to update the baseline. These fish surveys should be undertaken during construction and once the development is complete. Aquatic macroinvertebrate monitoring should also be undertaken before, during and after construction to supplement water quality monitoring.

Q12. Are there any other stakeholders that should be consulted as part of this process?

Yes, the River Girvan District Salmon Fishery Board

Additional Comments.

Construction and operation of the Craiginmoddie Wind Farm proposal has the potential to effect fish populations and fisheries within the River Stinchar and River Girvan catchments. We therefore request the updated Environmental Impact Assessment should assess (if they have not done so already) the following potential effects from the site preparation and construction and operational activities:

1. Forest Felling and subsequent effects of this activity e.g. acidification of watercourses, rates of Surface Drainage Run-off, sediment-laden surface drainage water, input of hydrocarbons
2. Construction activities – impediment to fish movement. Construction activities should not impede movement of all migratory and resident fish populations. New water crossings (temporary or permanent) should only be installed using SEPA design and best practice guidelines. The River Stinchar DSFB, River Girvan DSFB and Ayrshire Rivers Trust should be consulted beforehand to assist with the design and necessary mitigation measures. There is

REDACTED

an opportunity for the development to have a positive impact on the water environment by upgrading old crossings within the development that may prevent or hinder fish migration.

3. Construction/operation activities - increased silt loading to watercourses. Potential impacts from soil stripping, track construction and vehicle/plant movements, dewatering on receptor watercourses and abstraction of water from watercourses.

A comprehensive mitigation and monitoring plan using the most up to date best practice guidelines should be included that will address the above potential negative impacts on watercourses.

We hope these comments are helpful. Should you require further information or clarification of any points, please don't hesitate to contact the undersigned.

Yours sincerely

(Redacted)

Gillian McIntyre
Biologist and Project Manager

Brown C (Carolanne)

From: lisa.4.smith@bt.com <lisa.4.smith@bt.com>

Sent: 29 June 2020 07:57

To: Brown C (Carolanne) <Carolanne.Brown@gov.scot>; Econsents Admin <Econsents_Admin@gov.scot>

Cc: radionetworkprotection@bt.com

Subject: FW: Request for Scoping Opinion - Craiginmoddie Wind Farm - WID11237

OUR REF; WID11237

Dear Sir/Madam

Thank you for your email dated 15/06/2020.

We have studied this Windfarm proposal 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.

Please direct all queries to radionetworkprotection@bt.com

Regards

Lisa Smith

Engineering Services Radio Planning

Tel: REDACTED



This email contains information from BT that might be privileged or confidential. And it's only meant for the person above. If that's not you, we're sorry - we must have sent it to you by mistake. Please email us to let us know, and don't copy or forward it to anyone else. Thanks.

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British Telecommunications plc

R/O : 81 Newgate Street, London EC1A 7AJ

Melrose J (Joyce)

From: McGrogan, Joan <joan.mcrogan@crownestatescotland.com>
Sent: 29 July 2020 08:09
To: Brown C (Carolanne); Econsents Admin
Subject: 20200729 - Request for Scoping Opinion - Craiginmoddie Wind Farm - CES interests not affected - reply to Scotgov
Attachments: Craiginmoddie Wind Farm - Combined Scoping Report Documents.pdf

Dear Carolanne

Thank you for your email.

I write to confirm that the assets of Crown Estate Scotland are not affected by this proposal and we therefore have no comments to make.

Kind regards

RJE
EJA
ICT
Joan McGrogan
AED
Portfolio Co-ordinator
C
Crown Estate Scotland
E
REDACTED

6 Bell's Brae, Edinburgh, EH4 3BJ

Tel: +44 (0) 131 260 6070

www.crownestatescotland.com

[@crownestatescot](#)



Defence Infrastructure Organisation

Jill Roberts
Assistant Safeguarding Manager
Ministry of Defence
Safeguarding – Wind Energy
Kingston Road
Sutton Coldfield
West Midlands B75 7RL
United Kingdom

Mobile: REDACTED

E-mail: Jillian.roberts156@mod.gov.uk

Ms Carolanne Brown
Energy Consents Unit
Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Scotland
G28LU

Your ref: ECU 00002080

Our ref: DIO10048280

13 July 2020

Dear Carolanne

Site Name: Craiginmoddie Wind Farm

Proposal: Section36 Scoping Opinion for 16 Turbines between 180 metres - 230 metres to blade tip

Site Address: Carrick Hills in the south-east of South Ayrshire. North of the Stinchar Valley and south of the Girvan Valley.

Thank you for consulting the Ministry of Defence (MOD) on the above Section 36 Scoping Opinion for the proposed construction and operation of a wind farm.

I am writing to tell you that, subject to the provision of appropriate lighting, the MOD has no concerns in relation to the proposal.

The applicant proposes 16 turbines each with a maximum tip height of 230 metres above ground level. The development has been assessed using the grid references below as submitted in the planning application or in the developers' or your pro-forma

Turbine	Easting	Northing
1	230,279	597,877
2	230,846	597,795
3	231,350	597,644
4	231,574	597,219
5	231,605	598,378
6	232,047	598,755
7	232,655	598,897

8	232,832	599,329
9	232,539	599,676
10	232,058	599,778
11	230,560	598,735
12	231,066	598,841
13	231,415	599,176
14	231,964	599,313
15	233,026	599,641
16	230,996	598,402

The principal safeguarding concern of the MOD with respect to the development of wind turbines relates to their potential to create a physical obstruction to air traffic movements and cause interference to Air Traffic Control and Air Defence radar installations.

The proposed development falls within an area used for military low flying training, and where the introduction of structures has the potential to compromise aviation safety. As such, it will be necessary for structures to be fitted with appropriate aviation lighting to maintain the safety of military aircraft.

Specifically, those wind turbines that will be installed with a total height (to blade tip) of 150 metres or more, should be fitted with aviation warning lighting in accordance with the requirements of the Air Navigation Order (2016) as directed by the Civil Aviation Authority (CAA). In addition, any structure that forms part of the development and has a height greater than 15.2m above ground level and less than 150m above ground level should be fitted with aviation warning lighting in accordance with MOD lighting specifications.

The Defence Infrastructure Organisation Safeguarding team wishes to be consulted and notified of the progression of planning applications and submissions relating to this proposal to verify that it will not adversely affect defence interests.

If planning permission is granted, we would like to be advised of the following prior to commencement of construction;

- the date construction starts and ends;
- the maximum height of construction equipment;
- the latitude and longitude of every turbine.

This information is vital as it will be plotted on flying charts to make sure that military aircraft avoid this area.

If the application is altered in any way we must be consulted again as even the slightest change could unacceptably affect us.

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

Jill Roberts
Assistant Safeguarding Manager

Glasgow Airport - Consultation Response

Brown C (Carolanne)

From: #GLA Safeguarding <GLASafeguard@glasgowairport.com>
Sent: 07 July 2020 15:37
To: Brown C (Carolanne)
Subject: RE: Request for Scoping Opinion - Craiginmoddie Wind Farm

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.

Regards

Kirsteen



#GLA Safeguarding
#GLA Safeguarding

REDACT
glasafeguard@glasgowairport.com
www.glasgowairport.com

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



CURRENT HOLDER OF FOLLOWING AWARDS

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- Excellence in Transport Accessibility 2019

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Glasgow Prestwick Airport - Consultation Response

Melrose J (Joyce)

From: Steve Thomson <sthomson@glasgowprestwick.com>
Sent: 02 July 2020 16:06
To: Brown C (Carolanne); Econsents Admin
Cc: Safeguarding
Subject: RE: Request for Scoping Opinion - Craiginmoddie Wind Farm - Response - Glasgow Prestwick Airport Ltd - 2nd July 2020
Attachments: Craiginmoodie Windfarm - Response to Scoping Report submitted by Glasgow Prestwick Airport Ltd - 2nd July 2020.pdf

Carolanne

Please find attached Glasgow Prestwick Airport (GPA) Ltd's response to the scoping consultation (ECU EC00002080) for the proposed Craiginmoodie Windfarm.

Our principal response to this consultation is primarily aviation safety and impact on primary radar provision – and we have responded accordingly with that focus – but have suggested some additional areas of aviation assessment (ie, assessment against published Instrument Flight Procedures – IFP's) that we believe will also be require to be examined fully under the full EIA as part of any subsequent full planning application.

This proposed windfarm will be fully visibly to our primary radars – and as such will generate unacceptable radar display clutter – that will require to be mitigated for the life of the windfarm.

Kind Regards

Steve Thomson



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

Steve Thomson
 Manager Air Traffic Services
 Glasgow Prestwick Airport Ltd.

T: REDACTED
 REDACTED

sthomson@glasgowprestwick.com
www.glasgowprestwick.com



Please consider the environment before printing this email message.

Disclaimer:

This message contains confidential information and is intended only for Carolanne.Brown@gov.scot, Econsents_Admin@gov.scot, Safeguarding@corp.gpia.co.uk. If you are not Carolanne.Brown@gov.scot, Econsents_Admin@gov.scot, Safeguarding@corp.gpia.co.uk you should not disseminate, distribute or copy this e-mail. Please notify Steve Thomson immediately by e-mail if you have received this e-mail by mistake and delete this e-mail from your system. E-mail transmission cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. Glasgow Prestwick Airport Ltd. therefore does not accept liability for any errors or omissions in the contents of this message which arise as a result of e-mail transmission. If verification is required please request a hard-copy version. Additionally, the views, opinions, conclusions and other informations expressed in this message are not given or endorsed by the company unless otherwise indicated by an authorised representative independent of this message.

Craiginmoodie Windfarm Extension Summary of Questions	Glasgow Prestwick Airport (GPA) Ltd – response to Scoping Request – for Craiginmoodie Windfarm ECU00002080 2nd July 2020
Question Number	Question
	Q1 - Are there any potential significant impacts that have not been included? Glasgow Prestwick Airport (GPA) response: The EIAR intimates that it will consider the impact on military and civilian radars. GPA welcome this detailed assessment – and would be very keen to see the detailed output of such assessment. As stated in the Scoping Report – all turbines will be visible to GPA primary radars – and thus generate unacceptable radar display clutter – that will require to be mitigated for the life of the windfarm.
	Q2 - Is the intended method of assessment appropriate? While in general GPA consider the assessment methodology appropriate, GPA respectfully request that the aviation assessment should include any potential impact on published Instrument Flight Procedures both conventional and RNAV) for Glasgow Prestwick Airport as published in the UK AIP for EGPK – as the proposed windfarm is in an area of airspace close to our published IFP's.
	Q3 - Are there additional mitigation measures that should be considered? GPA consider aviation lighting needs to be consider in detail – particularly for any turbines in excess of 149.9m in height (AGL)
	Q4 - Are there any other landscape or visual receptors and viewpoint assessment locations that should be considered in the assessment? GPA make no comment on this question
	Q5 - Are there any other wind energy developments which should be included or excluded from the cumulative assessment? GPA make no comment on this question



HISTORIC
ENVIRONMENT
SCOTLAND

ÀRAINNEACHD
EACHDRAIDHEIL
ALBA

By email to: Carolanne.Brown@gov.scot

Ms Carolanne Brown
Case Officer
Energy Consents Unit

Longmore House
Salisbury Place
Edinburgh
EH9 1SH

Enquiry Line: REDACTED
HMConsultations@hes.scot

Our case ID: 300043670
Your ref: ECU00002080

26 June 2020

Dear Ms Brown

The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017
Proposed Section 36 application for Craiginmoddie Wind Farm, South Ayrshire

Scoping Report

Thank you for your consultation which we received on 15 June 2020 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 gardens and designed landscapes, inventory battlefields and historic marine protected areas (HMPAs).

WOSAS will also be able to offer advice on the scope of the cultural heritage assessment. This may include heritage assets not covered by our interests, such as unscheduled archaeology, and category B- and C-listed buildings.

Proposed Development

We understand that the proposed development comprises a windfarm of 16 turbines, each between 180 - 230m blade tip heights. The nearest settlements are Barr (4km south), Dailly (4km north), Crosshill (6.5km north).

Scope of assessment

Potential direct physical impacts

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

Potential setting impacts

There are a number of heritage assets within our remit in the vicinity of the development whose settings have the potential to be adversely impacted by it. The annex to this letter gives details of a number of assets which appear likely to experience 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 impacted.

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 on our Technical Conservation website at <http://conservation.historic-scotland.gov.uk/>.

We hope this is helpful. Please contact us if you have any questions about this response. The officer managing this case is Chloe Porter and they can be contacted by phone on REDACTED or by email on chloe.porter@hes.scot.

Yours faithfully

Historic Environment Scotland

ANNEX

EIA Scoping Report (May 2020)

We have reviewed the EIA Scoping Report (May 2020) submitted as part of this scoping request. We are content to agree the methodology and the proposed approach to field surveys. We are also content to agree on the extent of the study area proposed.

In your initial review of the cultural heritage in the wider landscape you have identified the following assets for our interest:

Schedule Monuments

- Mote Knowe, motte, Kilkerran (SM2863) which lies 1.5 km to the northwest of the Site boundary and lies low down within the narrow Lindsayston Burn.
- A group of enclosures: Knockinculloch (SM3357) (ca. 1.5km to the northeast) and a chambered cairn (Bencallen Hill, chambered cain (SM3890), in forestry ca. 3km to the southeast.
- Old Dalquharran Castle (SM316)

We would also mention at this stage the need to consider Maxwellston Hill fort (SM2201). It is around 4km west of the proposed site.

Gardens and Designed Landscapes

- Bargany (GDL00047)
- Kilkerran (GDL00238)
- Blairquhan (GDL00063)

A-listed buildings

- Bargany House (LB1171)
- Dalquharran Castle (LB125)
- Kilkerran House (LB1114)

We are content to agree with this first review of the cultural heritage.

We recommend that a ZTV is used to identify potential setting impacts which will also help establish if there are more assets to take into account. However, we would note that even where a ZTV indicates that no intervisibility would be possible from any such assets identified, the potential may remain for turbines to appear in the background of key views towards these assets, and this should be considered as part of the assessment.

It is important to note that some assets have settings that are particularly sensitive to impacts, and the likely sensitivity of the setting should be used to help determine which sites are assessed in more detail in the Environmental Impact Assessment Report.

We would also expect any assessment to contain a full appreciation of the setting of these historic environment assets and the likely impact on their settings.

We strongly recommend that our [Managing Change Guidance Note on Setting](#) is used to inform setting assessments and further information on good practice in cultural heritage assessment can be found in [Appendix 1 of the EIA Handbook](#).

It would be helpful if, where the assessment finds that significant impacts are likely, appropriate visualisations such as photomontage and wireframe views of the development in relation to the sites and their settings could be provided. Visualisations illustrating views both from the asset towards the proposed development and views towards the asset with the development in the background would be helpful. We would be happy to agree a list of wireframes and visualisations if that would be helpful to you.

It would also be helpful if the assessment included an assessment of the cumulative impact of the development with the existing Hadyard Hill Wind farm. We would expect viewpoints where there may be significant impacts to be illustrated with a photomontage.

Historic Environment Scotland
26 June 2020

Brown C (Carolanne)

From: JRC Windfarm Coordinations <windfarms@jrc.co.uk>
Sent: 16 June 2020 14:46
To: Brown C (Carolanne)
Subject: Request for Scoping Opinion - Craiginmoddie Wind Farm [WF515134]

Dear carolanne,

A Windfarms Team member has replied to your coordination request, reference **WF515134** with the following response:

Dear Carolanne,

Name/Location: Craiginmoddie Wind Farm

Site Centre/Turbine at NGR/IGR:

230,279 597,877
230,846 597,795
231,350 597,644
231,574 597,219
231,605 598,378
232,047 598,755
232,655 598,897
232,832 599,329
232,539 599,676
232,058 599,778
230,560 598,735
231,066 598,841
231,415 599,176
231,964 599,313
233,026 599,641
230,996 598,402

Development Radius: 0.1KM

Hub Height: 148.5m **Rotor Radius:** 81.5m

This proposal **cleared** with respect to radio link infrastructure operated by:

Scottish Power and Scotia Gas 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.

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, developers are advised to seek re-coordination prior to considering any design changes.

Regards

Wind Farm Team

The Joint Radio Company Limited
Delta House
175-177 Borough High Street
LONDON
SE1 1HR
United Kingdom

Office: REDACTED

JRC Ltd. is a Joint Venture between the Energy Networks Association (on behalf of the UK Energy Industries) and National Grid.

Registered in England & Wales: 2990041

<http://www.jrc.co.uk/about-us>

JRC is working towards GDPR compliance. We maintain your personal contact details in accordance with GDPR requirements for the purpose of "Legitimate Interest" for communication with you. However you have the right to be removed from our contact database. If you would like to be removed, please contact anita.lad@jrc.co.uk.

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 keeping the subject line intact or login to your account** for access to your coordination requests and responses.

<https://breeze.jrc.co.uk/tickets/view.php?auth=01x2idqaagzjuaaam%2F13LPCJktyuYg%3D%3D>

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e-mail: emily.bridcut@gov.scot

Ms Carolanne Brown
Energy Consents Unit
Scottish Government
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Our ref: FL/49-7

July 7th 2020

Dear Carolanne,

CRAIGINMODDIE WIND FARM, SOUTH AYRSHIRE

Thank you for seeking comment from Marine Scotland Science (MSS) in relation to freshwater and diadromous fish and fisheries on the scoping report for the proposed Craiginmoddie wind farm.

MSS recommend that the developer consults our generic scoping guidelines (<https://www2.gov.scot/Topics/marine/Salmon-Trout-Coarse/Freshwater/Research/onshoreren>) and in line with our guidelines we highlight the following matters:

- that the developer carries out site characterisation surveys to assess the presence and abundance of fish species which could potentially be impacted by the proposed development. Further details regarding survey and monitoring work can be found in our generic monitoring guidelines at the above web site;
- that the developer draws up appropriate site specific mitigation plans including a robust integrated water quality and fish population monitoring programme;
- that the developer is aware of ongoing acidification problems in the area;
- that the developer considers the potential impact on the water quality and fish populations should felling be carried out;



- that the developer considers the potential cumulative impact on the water quality and fish populations as a result of other developments which are in hydrological connectivity with the present proposal; and
- to contact, if not already done so, the Girvan District Salmon Fishery Board, the Stinchar Salmon Fishery Board and the Ayrshire Rivers Trust for further information on local fish populations.

Kind regards,

Dr Emily E. Bridcut.



The Granary | West Mill Street | Perth | PH1 5QP
 T: REDACTED E: info@mountaineering.scot
www.mountaineering.scot

By email to: Econsents_Admin@gov.scot

Energy Consents Unit
 Directorate for Energy and Climate Change
 5 Atlantic Quay
 150 Broomielaw
 Glasgow
 G2 8LU

30 June 2020

Dear Sir/Madam

Craiginmoddie Wind Farm: Environmental Impact Assessment Scoping Report

ECU reference 00002080

Background and Context

Energiekontor has submitted a scoping report for a wind farm of up to 16 turbines of up to 230m BTH in South Ayrshire. The proposed site lies east of the operational Hadyard Hill wind farm (52 turbines of 100-110m BTH), and between it and the scoping site of Carrick wind farm (scoping based on 17 turbines of 200m BTH). It is around 7km north of the application site of Clachrie wind farm (18 turbines of 200m BTH).

Mountaineering Scotland is a membership organisation with over 14,000 members and is the only recognised representative organisation for hill walkers, climbers, mountaineers and ski-tourers who live in Scotland or who enjoy Scotland's mountains, and acts to represent, support and promote Scottish mountaineering. Mountaineering Scotland also acts on behalf of the 85,000 members of the British Mountaineering Council (BMC) on matters related to landscape and access in Scotland, and provides training and information to mountain users to promote safety, self-reliance and the enjoyment of our mountain environment.

Assessment

Mountaineering Scotland is in general content with the proposed methodology in the Scoping Report. It has four observations which are set out below.

1. The principle of focussing on a 20km 'study area' is acceptable but that should not mean entirely ignoring visual impacts upon areas beyond 20km. Even the present assessment of the Scoping Report has been hindered by the restriction of the ZTV diagram to little more than the 20km radius from the site.
2. The Scoping Report states: "... there is little visibility beyond the 5-10km radius to the east and south because the bigger hills which sit behind the Foothills with Forest and Wind Farms LCT, would



screen visibility.”(Para 5.57) The Galloway Corbetts and most of the Donalds (hills >2000 feet) sit in the southeast quadrant from the proposed development site and summits at 11km to >27km distance are shown on the ZTV as having visibility of the site, mostly with 15-16 turbines in view. The LVIA supporting any future application should be more careful in its assertions.

3. Viewpoints on The Merrick, Shalloch on Minnoch, Cornish Hill and Cairnsmore of Carsphairn are appropriate. However, the absence of a viewpoint on the northern Rhinns of Kells – at the summit of Coran of Portmark, for example – is undesirable. If the number of viewpoints is an issue, we would regard Coran of Portmark (at c.19 km) as more important than Cairnsmore of Carsphairn (at 27km).

4. The visual relationship of the proposed development with the adjacent scoping site of Carrick wind farm and the application site of Clauchrie wind farm will be an important consideration in assessing the impact of any future Craiginmoddie planning application. Wirelines should clearly show these proposals unless they have been refused or withdrawn prior to an application for Craiginmoddie.

Yours sincerely

REDACTED

Davie Black
Access & Conservation Officer
Mountaineering Scotland

T: REDACTED

E: access@mountaineering.scot



NATS Safeguarding - Consultation Response

Brown C (Carolanne)

From: NATS Safeguarding <NATSSafeguarding@nats.co.uk>
Sent: 23 June 2020 15:25
To: Brown C (Carolanne)
Cc: NATS Safeguarding; Econsents Admin
Subject: RE: Request for Scoping Opinion - Craiginmoddie Wind Farm (SG20366)
OBJECTION

Dear Carolanne

We refer to the application above. The proposed development has been examined by our technical safeguarding teams. In the timeframe given to us we have been unable to thoroughly investigate the effects of the proposed development on our Operations, however, the relevant teams are being consulted.

Based on our preliminary technical findings, the proposed development does conflict with our safeguarding criteria. Accordingly, NATS (En Route) plc **objects to the proposal**. We will notify you within 4-6 weeks of the results of our operational assessment. Only if this assessment shows the impact to be acceptable will we be able to withdraw our objection.

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 for a wind farm. 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 further obliged to notify both NATS and the Civil Aviation Authority ("CAA") of that fact (which may lead to the decision made being subject to review whether by the CAA referring the matter for further scrutiny or by appropriate action being taken in the courts).

As this further notification is intended to allow the CAA sufficient time to consider whether further scrutiny is required, we understand that the notification should be provided prior to any granting of permission. You should be aware that a failure to consult NATS, or to take into account NATS's comments when deciding whether to approve a planning application, could cause serious safety risks for air traffic.

If you have any queries regarding this matter you can contact us using the details as below.

Kind regards

Emily



NATS Safeguarding

E: natssafeguarding@nats.co.uk

4000 Parkway, Whiteley,
Fareham, Hants PO15 7FL
www.nats.co.uk



RSPB Scotland

Energy Consents
 Directorate for Energy and Climate Change
 Scottish Government
 4th Floor
 5 Atlantic Quay
 150 Broomielaw
 Glasgow
 G2 8LU

30/06/2020

Dear Sir/Madam,

Scoping opinion for Craiginmoddie Wind Farm. Ref: ECU00002080

Many thanks for consulting RSPB Scotland on the above-referenced scoping opinion.

I am just writing to confirm that we are happy with the list of stakeholders to be consulted and with the proposed surveys and assessments methods set out in the ornithology section (5.90 to 5.110) and have no further comments to make.

Yours faithfully,

Ed Tooth
 Conservation Officer – Scottish Lowlands and Southern Uplands
 ed.tooth@rspb.org.uk

Dumfries & Galloway Office
 The Old School
 Crossmichael
 Castle Douglas
 Kirkcudbrightshire
 DG7 3AP

Tel: REDACTED
 Facebook: RSPBDumfriesandGalloway
 Twitter: @RSPBDandG

rspb.org.uk





**Scottish
Forestry**
Coilltearachd
na h-Alba

South Scotland Conservancy
55/57 Moffat Road
Dumfries
DG1 1NP

Tel: REDACTED
Doug Howieson, Conservator
Email: southscotland.cons@forestry.gov.scot

29 June 2020

Carolanne Brown
Energy Consent Unit
Scottish Government
by email

Dear Ms Brown

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

**REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR
CRAIGINMODDIE FOREST WIND FARM**

Thank you for consulting Scottish Forestry on the on Scoping Report for the proposed Craiginmoddie Forest Wind Farm (proposed development). Scottish Forestry is the Scottish Government agency responsible for policy, support and regulation of the forestry sector in Scotland. As such we comment on the potential impact of development proposals on forests and woodlands.

Scottish Forestry welcomes the applicants commitment to ensure that the proposed changes to Craiginmoddie Forest as a result of the proposed development, address the requirements of Scottish Government's Policy on Control of Woodland Removal and other relevant guidance. However consultation on this matter should be undertaken with Scottish Forestry and not Forestry and Land Scotland (FLS), as stated in section 5.118 of the Scoping Report.

FLS are the executive agency of Scottish Government responsible for the management of Scotland's national forests and land. As integration of the proposed development into future forest design plans is a key part of the development process and as FLS manage Carrick Forest to the immediate north and east of the site boundary, it would however be appropriate for them to be included in any stakeholder engagement for the proposed development.

There is a strong presumption in favour of protecting Scotland's woodland resources. In line with Scottish Government's wider objective to protect and expand Scotland's woodland cover, applicants are expected to develop their proposal with minimal woodland removal. The first consideration for all woodland removal decisions should be whether the underlying purpose of the proposals can reasonably be met without resorting to woodland removal. Woodland removal should be allowed only where it would achieve significant and clearly defined additional public benefits. In appropriate cases a proposal for compensatory planting may form part of this balance.

Scottish Forestry is the Scottish Government agency responsible for forestry policy, support and regulation



Scottish Government
Riaghaltas na h-Alba
gov.scot

S e Coilltearachd na h-Alba a' bhuidheann-ghnìomha aig Riaghaltas na h-Alba a tha an urra ri poileasaidh, taic agus riaghladh do choilltearachd

It would appear from Figure 2 Indicative Layout and the Forestry section of the Scoping Report that the proposed development falls within the category of woodland removal with a need for compensatory planting. Native Woodland, as identified in the Native Woodland Survey of Scotland (NWSS) is also present within the Site Boundary. Scottish Government's policy on control of woodland removal places a particularly strong presumption against its removal, this will need to be considered in the Forestry Impact Assessment.

Scottish Government's policy on control of woodland removal: implementation guidance February 2019 <https://forestry.gov.scot/publications/349-scottish-government-s-policy-on-control-of-woodland-removal-implementation-guidance/viewdocument> provides guidance on the level and detail of information Scottish Forestry will expect within the EIA Report, to help us reach an informed decision on the potential impact of the proposed development on forestry.

Annex 5 of this guidance provides information on calculating the area of compensatory planting, which will be required as the result of the proposed development. The applicant should note that any compensatory planting required as a result of the proposed development, may need to be considered under The Forestry (Environmental Impact Assessment) (Scotland) Regulations 2017.

<https://forestry.gov.scot/support-regulations/environmental-impact-assessment>

All felling, restocking, compensatory planting and future management proposals must be compliant with the most recent edition of the UK Forestry Standard (4th Edition 2017) and not the 3rd Edition 2011, as referenced in section 5.119 of the Scoping Report. <https://forestry.gov.scot/sustainable-forestry/ukfs-scotland>

Reference should also be made to Scotland's Forestry Strategy 2019-2029 (2019) and not The Scottish Forestry Strategy (2006).

<https://www.gov.scot/publications/scotlands-forestry-strategy-20192029/>

The applicant should also note that a new fourth edition of the UKWAS was introduced on 1 April 2018.

<http://ukwas.org.uk/>

Please don't hesitate to contact me if you have any questions regarding Scottish Forestry's response.

Yours sincerely

REDACTED

Martin MacKinnon

Tuesday, 16 June 2020

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

Dear Sir/Madam

SITE: Site At, Craiginmoddie Wind Farm, South Ayrshire, KA26 9RR
PLANNING REF: ECU00002080
OUR REF: DSCAS-0016221-V2J
PROPOSAL: REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36
APPLICATION FOR CRAIGINMODDIE WIND FARM

Please quote our reference in all future correspondence

Drinking Water Protected Areas

A review of our records indicates that there are no Scottish Water drinking water catchments or water abstraction sources, which are designated as Drinking Water Protected Areas under the Water Framework Directive, in the area that may be affected by the proposed activity.

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.



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To find out more about connecting your property to the water and waste water supply visit:



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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
- ▶ Scottish Water's current minimum level of service for water pressure is 1.0 bar or 10m head at the customer's boundary internal outlet. Any property which cannot be adequately serviced from the available pressure may require private pumping arrangements to be installed, subject to compliance with Water Byelaws. If the developer wishes to enquire about Scottish Water's procedure for checking the water pressure in the area, then they should write to the Customer Connections department at the above address.
- ▶ If the connection to the public sewer and/or water main requires to be laid through land out-with public ownership, the developer must provide evidence of formal approval from the affected landowner(s) by way of a deed of servitude.
- ▶ Scottish Water may only vest new water or waste water infrastructure which is to be laid through land out with public ownership where a Deed of Servitude has been obtained in our favour by the developer.
- ▶ The developer should also be aware that Scottish Water requires land title to the area of land where a pumping station and/or SUDS proposed to vest in Scottish Water is constructed.
- ▶ Please find information on how to submit application to Scottish Water at [our Customer Portal](#).

Next Steps:

▶ All Proposed Developments

All proposed developments require to submit a Pre-Development Enquiry (PDE) Form to be submitted directly to Scottish Water via [our Customer Portal](#) prior to any formal Technical Application being submitted. This will allow us to fully appraise the proposals.

Where it is confirmed through the PDE process that mitigation works are necessary to support a development, the cost of these works is to be met by the developer, which Scottish Water can contribute towards through Reasonable Cost Contribution regulations.

▶ Non Domestic/Commercial Property:

Since the introduction of the Water Services (Scotland) Act 2005 in April 2008 the water industry in Scotland has opened to market competition for non-domestic customers. All Non-domestic Household customers now require a Licensed Provider



to act on their behalf for new water and waste water connections. Further details can be obtained at www.scotlandontap.gov.uk

► **Trade Effluent Discharge from Non Dom Property:**

- Certain discharges from non-domestic premises may constitute a trade effluent in terms of the Sewerage (Scotland) Act 1968. Trade effluent arises from activities including; manufacturing, production and engineering; vehicle, plant and equipment washing, waste and leachate management. It covers both large and small premises, including activities such as car washing and laundrettes. Activities not covered include hotels, caravan sites or restaurants.
- If you are in any doubt as to whether the discharge from your premises is likely to be trade effluent, please contact us on 0800 778 0778 or email TEQ@scottishwater.co.uk using the subject "Is this Trade Effluent?". Discharges that are deemed to be trade effluent need to apply separately for permission to discharge to the sewerage system. The forms and application guidance notes can be found [here](#).
- Trade effluent must never be discharged into surface water drainage systems as these are solely for draining rainfall run off.
- For food services establishments, Scottish Water recommends a suitably sized grease trap is fitted within the food preparation areas, so the development complies with Standard 3.7 a) of the Building Standards Technical Handbook and for best management and housekeeping practices to be followed which prevent food waste, fat oil and grease from being disposed into sinks and drains.
- The Waste (Scotland) Regulations which require all non-rural food businesses, producing more than 50kg of food waste per week, to segregate that waste for separate collection. The regulations also ban the use of food waste disposal units that dispose of food waste to the public sewer. Further information can be found at www.resourceefficientscotland.com

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,

Planning Application Team
Development Operations Analyst
developmentoperations@scottishwater.co.uk



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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."



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property to the water and waste water supply visit:



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ScotWays - Consultation Response

Dalgleish K (Kieran)

From: Lynda Grant <lynda_grant@Scotways.com>
Sent: 06 July 2020 16:44
To: Econsents Admin
Cc: Brown C (Carolanne)
Subject: Re: Request for Scoping Opinion - Craiginmoddie Wind Farm

Categories: Category

Good afternoon,

Thank you for consulting ScotWays for a scoping opinion for the proposed section 36 application for the Craiginmoddie Wind Farm. We have no comments to make at this time.

Kind regards
Lynda

Lynda Grant
Access Officer
Scottish Rights of Way and Access Society (ScotWays)
24 Annandale Street, Edinburgh EH7 4AN
tel/fax: REDACTED
web: www.scotways.com
follow us on Twitter: @ScotWays
find us on Facebook: www.facebook.com/scotways

It's our 175th Anniversary! follow #ScotWays175 for details

Safeguarding Public Access in Scotland since 1845

A company limited by guarantee, registered in Scotland
Company number 24243
Registered office as above
Scottish Charity number SC015460

Our ref: PCS/171798

Your ref:

If telephoning ask for:
Jonathan Werritty

Carolanne Brown
Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

07 July 2020

By email only to: carolanne.brown@gov.scot

Dear Ms Brown

REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION CRAIGINMODDIE WIND FARM

Thank you for consulting SEPA on the scoping opinion for the above development proposal by your email received on 15 June 2020.

Advice to the planning authority

We consider that the following key issues must be addressed in the Environmental Impact Assessment process. To **avoid delay and potential objection**, the information outlined below and in the attached appendix must be submitted in support of the application.

- a) Map and assessment of all engineering activities in or impacting on the water environment including proposed buffers, details of any flood risk assessment and details of any related CAR applications.
- b) Map and assessment of impacts upon Groundwater Dependent Terrestrial Ecosystems and buffers.
- c) Map and assessment of impacts upon groundwater abstractions and buffers.
- d) Peat depth survey and table detailing re-use proposals.
- e) Map and table detailing forest removal.
- f) Map and site layout of borrow pits.
- g) Schedule of mitigation including pollution prevention measures.



Chairman
Bob Downes

Chief Executive
Terry A'Hearn

Angus Smith Building

6 Parklands Avenue, Eurocentral,
Holytown, North Lanarkshire ML1 4WQ
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- h) Borrow Pit Site Management Plan of pollution prevention measures.
- i) Map of proposed waste water drainage layout (if applicable).
- j) Map of proposed surface water drainage layout.
- k) Map of proposed water abstractions including details of the proposed operating regime.
- l) Decommissioning statement.

Further details on these information requirements and the form in which they must be submitted can be found in the attached appendix. We also provide site specific comments in the following section which can help the developer focus the scope of the assessment.

1 Site specific comments

- 1.1 Having reviewed the Environmental Impact Assessment Scoping Report (by Energie Kontor dated May 2020) we can offer the following comments:
 - We can confirm that habitat survey information is not required for areas which are heavily forested or recently felled.
 - Based on the information provided at this stage it seems unlikely that any development will take place within 250m of a groundwater supply source; if this is the case it would be helpful if the Environmental Statement (ES) provides evidence to confirm this.
 - Provided watercourse crossings are designed to accommodate the 1 in 200 year event and other infrastructure is located well away from watercourses we do not foresee from current information a need for more detailed information on flood risk.
- 1.2 All three of the classified watercourses that drain the site - The Dalquhairn Burn (ID: 10477), The Dobbingsstone Burn/Lindsayston Burn (ID: 10459) and The Palmullan Burn (ID: 10463) - are currently classified as being at high status. Works on site will need to prioritise the protection of these watercourses from any potential downgrade.

Regulatory advice for the applicant

1 Regulatory requirements

- 1.1 Authorisation is required under The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) to carry out engineering works in or in the vicinity of inland surface waters (other than groundwater) or wetlands. Inland water means all standing or flowing water on the surface of the land (e.g. rivers, lochs, canals, reservoirs).
- 1.2 Management of surplus peat or soils may require an exemption under The Waste Management Licensing (Scotland) Regulations 2011. Proposed crushing or screening will require a permit under The Pollution Prevention and Control (Scotland) Regulations 2012. Consider if other environmental licences may be required for any installations or processes.
- 1.3 A Controlled Activities Regulations (CAR) construction site licence will be required for management of surface water run-off from a construction site, including access tracks, which:

- is more than 4 hectares,
- is in excess of 5km, or
- includes an area of more than 1 hectare or length of more than 500m on ground with a slope in excess of 25°

See SEPA's [Sector Specific Guidance: Construction Sites \(WAT-SG-75\)](#) for details. Site design may be affected by pollution prevention requirements and hence we strongly encourage the applicant to engage in pre-CAR application discussions with a member of the regulatory services team in your local SEPA office.

- 1.4 Below these thresholds you will need to comply with [CAR General Binding Rule 10](#) which requires, amongst other things, that all reasonable steps must be taken to ensure that the discharge does not result in pollution of the water environment. The detail of how this is achieved may be required through a planning condition.
- 1.5 Details of regulatory requirements and good practice advice for the applicant can be found on the [Regulations section](#) of our website. If you are unable to find the advice you need for a specific regulatory matter, please contact a member of the local Environmental Performance Team by email at SWS@sepa.org.uk.

If you have queries relating to this letter please contact me by e-mail at planning.sw@sepa.org.uk.

Yours sincerely

Jonathan Werritty
Senior Planning Officer
Planning Service

Disclaimer

This advice is given without prejudice to any decision made on elements of the proposal regulated by us, as such a decision may take into account factors not considered at this time. We prefer all the technical information required for any SEPA consents to be submitted at the same time as the planning or similar application. However, we consider it to be at the applicant's commercial risk if any significant changes required during the regulatory stage necessitate a further planning application or similar application and/or neighbour notification or advertising. We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue. For planning applications if you did not specifically request advice on flood risk, then advice will not have been provided on this issue. Further information on our consultation arrangements generally can be found on our [website planning pages](#).

Appendix 1: Detailed scoping requirements

This appendix 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**.

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.

We would welcome the opportunity to comment on the draft submission. As we can process files of a maximum size of only 25MB the submission must be divided into appropriately named sections of less than 25MB each.

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 Appendix 2 of our [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 submitted in support of the planning application. Our [Technical flood risk guidance for stakeholders](#) outlines the information we require to be submitted as part of a Flood Risk Assessment. 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 Scottish Planning Policy states (Paragraph 205) that "Where peat and other carbon rich soils are present, applicants must assess the likely effects of development on carbon dioxide (CO₂) emissions. Where peatland is drained or otherwise disturbed, there is liable to be a release of CO₂ to the atmosphere. Developments must aim to minimise this release."
- 3.2 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.
- 3.3 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.
- 3.4 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](#).
- 3.5 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.

- 3.6 Please note we do not validate carbon balance assessments except where requested to by Scottish Government in exceptional circumstances. Our advice on the minimisation of 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 Please refer to [Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems](#) for further advice on the minimum information we require to be submitted.

6 Forest removal and forest waste

- 6.1 Key holing must be used wherever possible as large scale felling can result in large amounts of waste material and in a peak release of nutrients which can affect local water quality. The supporting information should refer to the current Forest Plan if one exists and measures should comply with the Plan where possible.

- 6.2 Clear felling may be acceptable only in cases where planting took place on deep peat and it is proposed through a Habitat Management Plan to reinstate peat-forming habitats. The submission must include:
- a) A map demarcating the areas to be subject to different felling techniques.
 - b) Photography of general timber condition in each of these areas.
 - c) A table of approximate volumes of timber which will be removed from site and volumes, sizes of chips or brash and depths that will be re-used on site.
 - d) A plan showing how and where any timber residues will be re-used for ecological benefit within that area, supported by a Habitat Management Plan. Further guidance on this can be found in [Use of Trees Cleared to Facilitate Development on Afforested Land – Joint Guidance from SEPA, SNH and FCS](#).

7 Borrow pits

- 7.1 Scottish Planning Policy states (Paragraph 243) that “Borrow pits should only be permitted if there are significant environmental or economic benefits compared to obtaining material from local quarries, they are time-limited; tied to a particular project and appropriate reclamation measures are in place.” The submission must provide sufficient information to address this policy statement.
- 7.2 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 250 metres. 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 loch or watercourse 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 an associated 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 CO₂.
- 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 in order to produce a grade of rock that will not cause siltation problems during its end use on tracks, trenches and other hardstanding.

8 Pollution prevention and environmental management

- 8.1 One of our key interests in relation to developments is pollution prevention measures during the periods of construction, operation, maintenance, demolition and restoration. 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 \(GPPs\)](#).

9 Life extension, repowering and decommissioning

- 9.1 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.
- 9.2 The submission needs to demonstrate that there will be no discarding of materials that are likely to be classified as waste as any such proposals would be unacceptable under waste management licensing. Further guidance on this may be found in the document [Is it waste - Understanding the definition of waste](#).



By e-mail only to: Econsents_Admin@gov.scot

Energy Consents Unit
The Scottish Government
5 Atlantic Quay
150 Brommielaw
Glasgow
G2 8LU

Date: 6 July 2020

Our ref: CNS/REN/WF/SA – Craiginmoddie (Hadyard) – CEA159545 – A3253894
Your ref: ECU00002080

FAO Carolanne Brown,

**Electricity Act 1989 Section 36
The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations
2017
Request for Scoping Opinion for proposed Section 36 Application for Craiginmoddie
Wind Farm**

Many thanks for your email dated 15 June 2020 requesting a scoping opinion for the above development from Scottish Natural Heritage (SNH). The consultation is supported by the Craiginmoddie Wind Farm EIA Scoping Report (May 2020).

Background

We understand that the development being considered would comprise approximately 16 wind turbines each between 180-230m blade tip height with a generating capacity of around 90MW including associated infrastructure. The proposed development site is located within privately owned commercial forestry, located approximately 4km south east of the village Dailly, within the administrative boundary of South Ayrshire Council (SAC).

We are aware that the site formed part of a larger area that was part of the Hadyard Hill Wind Farm Extension Section 36 application (ECU00003118) submitted by Scottish Southern Energy in 2015, initially for 31 turbines reduced to 22. However this application was withdrawn by SSE prior to determination.

We provided pre-application advice to EnergieKontor in relation to ornithology baseline surveys for this proposal in an e-mail dated 13 January 2020. We also attended an Inception/Pre-scoping meeting with the applicant via Zoom on the 21 May 2020.

SNH's advice on issues to include in Environmental Impact Assessment

Scottish Natural Heritage, Caspian House, 2 Mariner Court,
Clydebank Business Park, Clydebank G81 2NR
Tel: 0131 314 6750 www.nature.scot

Dualchas Nàdair na h-Alba, Taigh Caspian, 2 Cùirt a' Mharaiche,
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General advice

We refer the applicant to our “general pre-application/scoping advice to developers of onshore wind farms” which can be found via <https://www.nature.scot/professional-advice/planning-and-development/advice-planners-and-developers/renewable-energy-development/onshore-wind-energy/advice-wind-farm>

This provides guidance on issues that developers and their consultants should consider for wind farm developments and includes information on recommended survey methods, sources of further information and guidance and data presentation. Attention should be given to the full range of advice included in the guidance. The checklist in Annex 1 of our guidance sets out our expectations of what should be included in the ES. The guidance document will be updated over time to reflect any changes to available information and our guidance, so users should ensure they download the most up to date version before use.

Collecting and presenting information

We recommend that the ecological chapters of the Environmental Statement (ES), are split into topics, e.g. protected areas, protected species, habitats (terrestrial, freshwater) etc. The ES should include information and assessment of which activities associated with the construction and operations of the development are likely to have direct and indirect (including cumulative) significant environmental effects on the relevant natural heritage receptors, along with clear details of any mitigation. A schedule of environmental mitigation should be provided in an annex for developments with impacts on natural heritage interests. The schedule should compile all the environmental mitigation/enhancement measures into one list/table, for ease of reference.

Landscape and Visual Impact Assessment

The proposed Craiginmoddie Wind Farm would introduce a number of very tall turbines (16 x up to 230m), which would require lighting, into the South Ayrshire landscape, to be located in the Carrick Hills adjacent to the existing Hadyard Hill Wind Farm. The site is less than 8km from the north western boundary of the Merrick Wild Land Area (WLA) and is partly surrounded by the Galloway Dark Skies Park. This is a sensitive area for a wind farm of this scale. We advise that there are likely to be significant landscape and visual impacts arising from the proposed scheme on its own and in combination with existing, adjacent developments. The scale and layout of proposed turbines, the requirement for lighting, their relationship to other wind farms and key characteristics are likely to result in a complex and confusing pattern of development. It is our view that these issues are likely to be challenging to resolve.

The landscape and visual impact assessment (LVIA) should be carried out in accordance with ‘*Guidelines for Landscape and Visual Impact Assessment: Third Edition*’ (Landscape Institute and IEMA, (2013) (‘GLVIA3’). Please note that this guidance is a key document for LVIA and does not yet appear to be referenced in the scoping report.

With turbines proposed at 10.6km from Shalloch on Minnoch and 15.8km from the Merrick summit itself, the highest point on the southern Scotland mainland, we advise that likely impacts on the Merrick WLA should be fully considered and that viewpoints within the WLA are likely to be key design points. The EIAR should include a Wild Land Assessment and, considering the number of turbines, their height and location, we advise that the assessment should take into account both day and night time impacts on the WLA. Accordingly both the wild land assessment and the lighting assessment should take this into account. Importantly there should be night time viewpoint(s) located within the WLA and the wild land assessment should examine how the lighting would affect the wild land qualities at dusk and after dark.

Assessment for turbine lighting

Aviation lighting is a key issue for this proposal given the height of the turbines and the site's proximity to the Merrick WLA and the Galloway Dark Skies Park. Our advice on the assessment for turbine lighting is that it could result in adverse impacts on the wild land qualities of the Merrick WLA.

Turbines of 150m or more in height are required to be fitted with aviation lighting. This means that typically turbines would be lit with red aviation lighting mounted on each nacelle and also fitted with lower intensity lights at the mid-point of the towers. Approved mitigation set out in CAP 764 – CAA Policy and Guidelines on Wind Turbines guidance <https://publicapps.caa.co.uk/docs/33/CAP764%20Issue6%20FINAL%20Feb.pdf> means that lights can potentially be dimmed from 2000 candela (cd) to 200 cd in good visibility (greater than 5km). Tower lighting would typically be 32cd. The proposed development boundary lies less than 8km from the WLA boundary. A hub-height ZTV would have clarified likely visibility of lighting from elevated areas in the WLA.

Our experience is that 200cd lighting can be clearly visible and draw the eye within an unlit context at a distance of 20km. Therefore, based on the information we have and our understanding of aviation lighting, we advise that the proposal could introduce eye-catching and prominent lights into an area important for its dark skies. We advise that the study area should extend beyond the 10km proposed in the scoping report (para 5.78) to include, at least, the ridge as far south as the Merrick (15.8km).

We advise that the applicant assesses the potential for adverse impacts of aviation lighting on the wild land qualities of the Merrick WLA. The assessment should follow our draft guidance at <https://www.nature.scot/professional-advice/landscape-change/landscape-policy-and-guidance/landscape-policy-wild-land/wild-land-area-descriptions-and-technical-guidance>.

More generally, the related landscape and visual assessment of turbine lighting should be informed by the scoping advice at Annex 2 of our recently updated '*general scoping and pre-application advice*' document at <https://www.nature.scot/general-pre-application-and-scoping-advice-onshore-wind-farms>.

The turbine lighting assessment should consider the cumulative effects of lights from other relevant consented or application stage schemes e.g. Clauchrie and Arecleoch Extension wind farms. It should also include the proposed Carrick Wind Farm which is currently at scoping. The proposed lighting of the cumulative schemes should be illustrated on the night time photomontage from e.g. Shalloch on Minnoch (or a suitable agreed viewpoint) and any other night time photomontages. Despite potential mitigation, we advise that lights should be shown at 2000cd on all 16 turbines, as this is the worst case scenario.

If directional lighting is to be employed as a form of mitigation, then it would also be useful to include a lighting intensity ZTV within the assessment (this ZTV should also show the boundaries for the Galloway Dark Skies Park and the Merrick WLA).

Statutory designated sites

Blair Farm SSSI

The proposed wind farm site lies approximately 2km from Blair Farm SSSI, which is of national importance and is designated for geological interests. Information on the SSSI can be found on the SiteLink pages of our website: <https://sitelink.nature.scot/site/224>

We do not consider there is connectivity between this SSSI and the proposed development site and therefore consider that Blair Farm SSSI can be scoped out of the EIA.

Auchalton SSSI

The proposed wind farm site lies, at the closest point, approximately 3.5km from Auchalton SSSI, which is of national importance and is designated for lowland neutral grassland. Information on the SSSI can be found on the SiteLink pages of our website: <https://sitelink.nature.scot/site/96>

We do not consider there is connectivity between this SSSI and the proposed development site and therefore consider that Auchalton SSSI can be scoped out of the EIA.

Knockgardner SSSI

The proposed wind farm site lies, approximately 4.4km from Knockgardner SSSI, which is of national importance and is designated for geological interests. Information on the SSSI can be found on the SiteLink pages of our website: <https://sitelink.nature.scot/site/879>

We do not consider there is connectivity between this SSSI and the proposed development site and therefore consider that Knockgardner SSSI can be scoped out of the EIA.

Statutory Protected Species – general

A number of protected species may be present and impacted by the development proposals. We advise that species surveys should have been completed no more than 18 months prior to submission of the application, to ensure that the survey results are a contemporary reflection of species activity at and around the site.

Details of species and associated legislation can be found on our website at <https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/protected-species/legal-framework>. It is important that any licensing issues are fully established as part of the planning application. This is to avoid a situation where planning permission is secured but the lack of a species licence prevents the development from proceeding.

Full details of survey methodologies, areas surveyed and details of any limitations to survey efforts should be included within the Environmental Statement.

The ES should also report the survey results including figures showing the survey areas/results with infrastructure/turbine layout overlapping, evaluate impacts predicted to arise as a result of the development proposals, assess the significance of these impacts and recommend mitigation and/or compensation measures as is necessary and appropriate.

Where survey methods or other work deviates from published guidance, deviations should have been agreed in writing with SNH in advance of carrying out survey work. A full description of the methodology used should be provided in the ES (technical appendices should be used for this where appropriate), along with an explanation of why any deviations are considered appropriate.

European Protected Species

Otters

We understand from the scoping report that an Extended Phase 1 Habitat survey was undertaken that included a protected fauna walkover. It is not clear what time of year this walkover was undertaken.

No evidence of otter was identified during the protected fauna walkover but *Terrestrial & Aquatic Ecology* section 5.72 of the scoping report states that “*Otter will likely utilise the burns and water courses at certain times of year, particularly for foraging during spring/summer when food is abundant (i.e. frog spawning). Further protected mammal species surveys will be undertaken in 2020.*”

If this survey work finds that otter could be affected by the proposal an otter protection plan should be prepared. If the implementation of the identified mitigation measures within this plan is not sufficient to avoid offences under protected species legislation, a licence will be required from SNH before the works can proceed.

We refer the applicant to our recently published species guidance note for otters that brings together all the latest information and advice, including legal protection, survey methods, mitigation measures and licensing requirements – <https://www.nature.scot/species-planning-advice-otter>

Bats

Bat Roost Surveys

There is no mention of bat roost surveys having either been or proposed to be undertaken within the scoping report. We recommend that surveys to identify roosting features for bats should be undertaken prior to the application being submitted.

If any suitable roosting sites are identified then further survey work to identify presence or absence, species, numbers, roost function and flightlines should also be undertaken prior to the submission and determination of any planning application for this proposal.

We further advise that if any bat roosts are found to be present a bat protection plan should be prepared. If the implementation of the identified mitigation measures within this plan is not sufficient to avoid offences under protected species legislation, a licence will be required from SNH before the works can proceed.

We refer the applicant to our species guidance note for bats that brings together all the latest information and advice, including legal protection, survey methods, mitigation measures and licensing requirements – <https://www.nature.scot/species-planning-advice-bats>

Bat Activity Surveys

As detailed in *Terrestrial & Aquatic Ecology* section 5.61-5.63 of the scoping report bat activity surveys are proposed to be undertaken in line with our *Bats and Onshore Wind Turbines – Survey, Assessment and Mitigation* guidance (2019) <https://www.nature.scot/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation> which we support.

Given that the turbines are likely to be key-holed, positioning of the automated detectors is important, but likely to be constrained by the existing pattern of tree cover. In practice this is likely to mean that detectors will be placed in forest rides/fire-breaks. This is likely to replicate where the majority of bats such as pipistrelles are currently concentrating their foraging, i.e. along forest edges.

However, *Nyctalus spp.* are much less constrained in this way and may be foraging over a wide area above the tree canopy, in which case ground-based detectors may miss some of their calls. Therefore, we recommend that if there are any met masts available on site they should be used for at-height monitoring, in line with the SNH guidance.

With regards to mitigation for bats, as a minimum, we would expect turbines to be located where no part of their structure or blades should fall within 50m of the nearest building, tree or hedgerow in line with Natural England's Bats and onshore wind turbines Interim guidance Technical Information note TIN059

<http://publications.naturalengland.org.uk/publication/35010> We may recommend further mitigation measures once we have considered the full survey results.

In line with our guidance we encourage the applicant to submit the static automated bat detector data for this proposal to the secure online tool *Ecobat*

<https://www.mammal.org.uk/science-research/ecostat/> This is likely to provide the most objective assessment of activity on which to base any further mitigation recommendations.

Great crested Newt (GCN)

There is no mention of great crested newt surveys having either been or proposed to be undertaken within the scoping report.

In line with our guidance note for great crested newts – <https://www.nature.scot/species-planning-advice-great-crested-newt> if the proposal is within 500m of potential GCN breeding ponds then we recommend that habitat suitability assessment, eDNA sampling and/or presence/absence surveys of ponds should be undertaken prior to the submission and determination of any planning application for this proposal.

If this survey work finds that great crested newts could be affected by the proposal a great crested newt protection plan should be prepared. If the implementation of the identified mitigation measures within this plan is not sufficient to avoid offences under protected species legislation, a licence will be required from SNH before the works can proceed.

Nationally Protected Species

Water voles

No evidence of water vole was recorded during the protected fauna walkover but *Terrestrial & Aquatic Ecology* section 5.72 of the scoping report states that given the habitats present on site there is the potential for water vole to be present and further protected mammal species surveys will be undertaken in 2020.

If water vole and their habitat could be affected by the proposal a water vole protection plan should be prepared. If the implementation of mitigation measures is not sufficient to avoid offences under protected species legislation, a licence will be required from SNH before the works can proceed.

We refer the applicant to our species guidance note for water voles that brings together all the latest information and advice, including legal protection, survey methods, mitigation measures and licensing requirements – <https://www.nature.scot/species-planning-advice-water-vole>

Badgers

Terrestrial & Aquatic Ecology section 5.68 of the scoping report states that “the dense nature of the plantation limited survey through the majority of the site which limited accessibility to check for signs of badger. The plantation edge was walked to identify any tracks, territory boundary markings or outlier setts, however no evidence of either was recorded.” However, *Terrestrial & Aquatic Ecology* section 5.72 of the scoping report states that given the habitats present on site there is the potential for badger to be present and further protected mammal species surveys will be undertaken in 2020.

If this survey work finds that badger could be affected by the proposal a badger protection plan should be prepared. If the implementation of the identified mitigation measures within this plan is not sufficient to avoid offences under protected species legislation, a licence will be required from SNH before the works can proceed.

We refer the applicant to our recently published species guidance note for badgers that brings together all the latest information and advice, including legal protection, survey methods, mitigation measures and licensing requirements:
<https://www.nature.scot/species-planning-advice-badger>

Red Squirrel

The desk study identified three records of red squirrel within 5km of the site however no evidence of red squirrel was recorded during the protected fauna walkover. *Terrestrial & Aquatic Ecology* section 5.72 of the scoping report states that given the habitats present on site there is the potential for red squirrel to be present and further protected mammal species surveys will be undertaken in 2020.

If this survey work finds that red squirrel could be affected by the proposal a red squirrel protection plan should be prepared. If the implementation of the identified mitigation measures within this plan is not sufficient to avoid offences under protected species legislation, a licence will be required from SNH before the works can proceed.

We refer the applicant to our guidance note for red squirrel that brings together all the latest information and advice, including legal protection, survey methods, mitigation measures and licensing requirements: <https://www.nature.scot/species-planning-advice-red-squirrel>

Pine Marten

The desk study identified one pine marten record of red within 5km of the site, however no evidence of pine marten was recorded during the protected fauna walkover. *Terrestrial & Aquatic Ecology* section 5.72 of the scoping report states that given the habitats present on site there is the potential for pine marten to be present and further protected mammal species surveys will be undertaken in 2020.

If this survey work finds that pine marten could be affected by the proposal a pine marten protection plan should be prepared. If the implementation of the identified mitigation measures within this plan is not sufficient to avoid offences under protected species legislation, a licence will be required from SNH before the works can proceed.

We refer the applicant to our species guidance note for pine marten that brings together all the latest information and advice, including legal protection, survey methods, and mitigation measures and licensing requirements:
<https://www.nature.scot/species-planning-advice-pine-marten>

Fish and Freshwater Pearl Mussel (FWPM)

Section 5.49 *Terrestrial & Aquatic Ecology* of the scoping report confirms that watercourses draining from within the development boundary will be subject to a fish and freshwater pearl mussel (FWPM) habitat assessment.

In line with our “general pre-application/scoping advice to developers of onshore wind farms” <https://www.nature.scot/professional-advice/planning-and-development/renewable-energy-development/types-renewable-technologies/onshore-wind-energy/general-advice-wind-farm> We recommend that as a minimum, all areas directly (e.g. watercourse crossings) or indirectly (e.g. sediment run off) affected by the development and appropriate buffers up and downstream should have a habitat survey following the Scottish Fisheries Coordination Centre Method referenced below. This should inform the likelihood of the presence of salmonids, eels, freshwater pearl mussel and other protected/BAP species and so the need or otherwise for species specific surveys.

Our guidance on freshwater pearl mussel survey methods can be found on our website via <https://www.nature.scot/plants-animals-and-fungi/invertebrates/freshwater-invertebrates/freshwater-pearl-mussel> . The Scottish Fisheries Coordination Centre (SFCC) webpage <http://www.sfcc.co.uk/resources/habitat-surveying.html> provides links to the recommended SFCC habitat survey method (*Habitat Surveys Training Course Manual, Revised August 2007*), as well as other useful survey method information for fish. Note that where there is suitable habitat for freshwater pearl mussel, and particularly where salmonids are present, we would expect a freshwater pearl mussel survey to be carried out following our guidance.

Where the proposed development site has permanent watercourses or water bodies in it or connected to it, you should seek advice from SEPA regarding water crossings and the adequacy of any hydrological work undertaken as part of the EIA.

We agree that all works should be carried out in accordance with relevant hydrological legislation (such as EC Water Framework Directive (2000/60/EC) and The Water Environment (Controlled Activities)) and SEPA's Pollution Prevention Guidelines to prevent negative impacts from the discharge of surface water into any watercourses within the site.

Deer

We recommend that if deer are present on or will use the development site, an assessment of the potential impacts on deer welfare, habitats, neighbouring and other interests (e.g. access and recreation, road safety, etc.) should be presented. If the development would, or could, result in significant impacts, a draft deer management statement should be provided, setting out how the impacts will be addressed. There's advice on this in SNH's Guidance "*What to consider and include in deer assessments and management at development sites*", which is available on our website at: <https://www.nature.scot/guidance-planning-and-development-what-consider-and-include-deer-assessment-and-management>

Ornithology

We provided pre-application advice to EnergieKontor in relation to ornithology baseline surveys for this proposal in an e-mail dated 13 January 2020 and confirmed that we are content with the survey work as proposed. We continue to recommend that the VP view shed figures should make it clear at what height the view-shed for each VP has been calculated and how the presence of trees has affected this.

We may make specific comment on the ornithology survey work once full details are available to us. Any deviations from published guidance during the course of survey work should be fully explained and justified in the ES.

Wider Countryside/Nesting birds

Our advice with regards to breeding birds is that the following mitigation is required to minimise the impact of the development.

- Ground or vegetation clearance works should be undertaken out with the main bird nesting season (March-August inclusive). If this is not possible, a suitably experienced ecologist should check the development site before work commences to determine the presence of any nesting birds. If nesting birds are found, a suitably sized buffer zone should be set up around the nest and no work within this zone should commence until the young have fledged or the nest is no longer in use. This will ensure that no nests are destroyed during the site construction works and no offences are committed under the Wildlife and Countryside Act 1981 (as amended).

If the development is not carried out in accordance with this mitigation measure, the applicant may risk committing an offence.

Habitats

We note from section 3 "*Site Description and description of the proposed development*" of the scoping report that the site is described as comprising predominantly rough grassland and extensive areas of plantation forestry. *Terrestrial & Aquatic Ecology* section 5.49 of the scoping report confirms that a Phase 1 habitat survey and NVC assessment of habitats within a 300m buffer of proposed turbine locations, borrow pits and a 100m buffer from proposed tracks will be undertaken. We recommend that the ES should include a map of the NVC survey results with the wind farm boundary, proposed turbines, tracks and infrastructure

layout overlapping. Records of any rare or scarce plant species recorded within the site should also be included within the ES.

The proposed development site is located within privately owned commercial forestry. As felling will be required for this development, we recommend continued consultation with Forestry and Land Scotland regarding requirements for compensatory planting according to the Scottish Government's policy on the control of woodland removal available via <https://forestry.gov.scot/publications/349-scottish-government-s-policy-on-control-of-woodland-removal-implementation-guidance/download>

Peat

The proposed Craiginmoddie Wind Farm site includes areas mapped as 'Class 1' on SNH's Carbon and Peatland map 2016, see <https://www.nature.scot/professional-advice/planning-and-development/advice-planners-and-developers/soils/carbon-and-peatland-2016-map> Class 1 areas are nationally important carbon-rich soils, deep peat and priority peatland habitat and are likely to be of high conservation value.

While Scottish Planning Policy identifies such areas as 'areas of significant protection', a proposal located in the mapped area would not, in itself, mean that the proposal is unacceptable, or that carbon rich soils, deep peat and priority peatland habitat would be adversely affected. However the proposal will need to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.

The scoping report states that "*Where necessary, peat depth survey will be undertaken, in accordance with Scottish Government guidance*". We advise that detailed peat surveys of the site, measuring the peat deposit to full depth, should be undertaken in accordance with Scottish Government guidance (see <https://www.gov.scot/publications/peatland-survey-guidance/>). The probing results should be used to inform a Peat Stability Risk Assessment (PSRA).

We recommend that peat survey results should also be used to inform the design and layout process, so that the development avoids, where possible, fragile and priority habitats and other sensitive areas e.g. blanket bog and peat. Where this is not possible, suitable restoration and/or compensation measures should be presented in the EIA Report in the form of a draft Habitat Management Plan (HMP). HMPs should follow our guidance on "*What to consider and include in Habitat Management Plans*" available via <https://www.nature.scot/guidance-planning-development-what-consider-and-include-habitat-management-plans> We recommend that the HMP for this site should tie in with any relevant bog (and other) habitat restoration proposals for nearby sites in the area.

We recommend that the applicant should consult with SEPA regarding excavated peat reuse and disposal.

Concluding remarks

Please see our detailed comments on the targeted questions, listed within the scoping report in the Annex attached to this letter. Please note that while we are supportive of the principle of renewable energy, our advice is given without prejudice to a full and detailed consideration of the impacts of the proposal if it is submitted as a formal application.

Should you have any queries about this letter, in the first instance, please contact me at Natalie.Ward@nature.scot

Yours sincerely

[By e-mail]

Natalie Ward
Operations Officer
Strathclyde & Ayrshire

Annex – Scoping Report Questions – SNH comments:

i) Landscape and Visual Amenity

Q3: Can it be confirmed that a 45km study area for the LVIA is considered to be appropriate starting point for the LVIA, but that approximately 20km is suitable for the detailed assessment of likely landscape and visual significant effects?

For turbines of this height a 45km study area is appropriate. However, given that turbines of 230m are potentially visible up to more than 70km we advise that a 20km detailed study area might be too restrictive given the cumulative baseline and the landscape context. Accordingly, the applicant should ensure that the detailed study area contains relevant sensitive receptors likely to have potential for significant effects.

Q4: Are the proposed viewpoint locations considered to be suitable for the LVIA?

The scoping report seems to provide a reasonable spread of viewpoints. However the final list of viewpoints is the responsibility of the applicant's landscape consultant and each should be micro-sited to show the worst case scenario. We reserve the option to request additional viewpoints as the application progresses should we consider it necessary.

We suggest that a further viewpoint location is investigated on Arran from where the turbines might be seen in the foreground of views to the high tops of the Merrick WLA.

We would welcome clear numbering of all turbines on at least one visualisation for each viewpoint. We also suggest that forestry felling is shown in any visualisation from a high level viewpoint that looks down into the site.

The proposed night time lighting viewpoints have not yet been indicated. We advise that there should also be at least one viewpoint within the WLA from which a lighting assessment is carried out and photomontages produced. We advise that Shalloch on Minnoch should be considered and we are happy to discuss alternative viewpoints which could clearly represent the likely impact on the northern parts of the WLA.

Q5: Confirmation on the approach to the assessment of likely effects on wild land is Requested

The scoping report contains limited information on the proposed approach to the assessment of likely effects on the Merrick WLA. We acknowledge that the wild land assessment is likely to focus on the northern part of the WLA but advise that this should be presented in the context of the WLA overall, with all qualities considered at the outset. The wild land assessment should follow SNH's 2017 *Draft 'Assessing Impacts on Wild Land Technical Guidance'* available at: <https://www.nature.scot/professional-advice/landscape-change/landscape-policy-and-guidance/landscape-policy-wild-land/wild-land-area-descriptions-and-technical-guidance>.

The wild land assessment should include an assessment of lighting on the wild land qualities. The 16 pairs of red turbine lights would be new, incongruous and potentially dominant focal points in the darkness clearly representing contemporary, human artefacts and activity which could detract from and weaken the qualities of wildness. The proposal could greatly diminish the wild land experience sought by those who walk into the hills before dawn and those who intentionally stay on the hills after dark to encounter the sunset and dark skies within the Merrick WLA.

Please see the landscape advice provided in our recent (28/5/20) response to the section 36 Application for Clauchrie wind farm, which should be available under reference no: ECU00002001 on the Energy Consents website at: <https://www.energyconsents.scot/Default.aspx>

Q6: Can it be confirmed that this approach to the methodology and inclusion of schemes for the cumulative assessment is considered to be appropriate?

The outline approach to cumulative LVIA is appropriate. We advise that Carrick Wind Farm currently at scoping should also be included. We also advise that the applicant includes any further relevant schemes that are scoped prior to the submission of Craiginmoddie.

Regarding paired ZTVs – whilst this provides a very helpful illustration of additional visibility we recommend that the LVIA includes all relevant schemes as well as those close to the site. For example it would be helpful to show the combined and additional visibility of more distant wind farms which would require aviation lighting and where both schemes might be visible from key viewpoints within the Merrick WLA and the Galloway Dark Skies Park.

Q7: Is the proposed study area and approach to the RVAA set out above (*in section 5.74 Residential Visual Amenity Assessment*) considered to be appropriate?

N/A.

Q8: Are there any other relevant consultees who should be consulted about the LVIA process?

Not that we are aware of.

ii) Hydrology, Hydrogeology and Geology

Q9: Is the proposed scope of assessment set out above deemed to be appropriate?

As mentioned above, we advise that detailed peat surveys of the site measuring the peat deposit to full depth, should be undertaken in accordance with Scottish Government guidance (see <https://www.gov.scot/publications/peatland-survey-guidance/>) and the results used to inform a Peat Stability Risk Assessment (PSRA).

iii) Biodiversity

Q11: Do you agree with the conclusions and recommendations of the ecology reports summarised above?

In relation to the ecology surveys proposed for this development on the basis of the information provided we are broadly content with the proposed approach (see our advice in the covering letter). While the survey work is therefore likely to be sufficient to inform the EIA, we reserve full judgement until we have considered the full survey findings.

The applicant should be aware that we may make specific comment on the survey work once full details are available to us. Any deviations from published guidance during the course of survey work should be fully explained and justified in the ES.

Q12: Are there any other stakeholders that should be consulted as part of this process?

Not that we are aware of.

Ornithology

Q13: Are there any other stakeholders that should be consulted as part of ornithology assessment?

As advised in our 13 January 2020 e-mail to EnergieKontor we recommend that the raptor study groups/black grouse surveyors (such as RSPB) should be contacted for any historical

raptor and black grouse records within the vicinity of the proposal and this information should be included within the final ornithology report.

Development Management and Strategic Road Safety
Roads Directorate

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Your ref:
 ECU00002080

Our ref:

Date:
 06/07/2020

econsentsadmin@gov.scot
Carolanne.Brown@gov.scot

Dear Sirs,

ELECTRICITY ACT 1989

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

REQUEST FOR SCOPING OPINION FOR PROPOSED SECTION 36 APPLICATION FOR CRAIGINMODDIE WIND FARM

With reference to your recent correspondence on the above development, we acknowledge receipt of the Environmental Impact Assessment Scoping Report (SR) prepared by EnergieKontor in support of the above development.

This information has been passed to our advisors for review in their capacity as Term Consultants to Transport Scotland – Roads Directorate. Based on the review undertaken, we would provide the following comments.

Proposed Development

We understand that EnergieKontor UK Ltd is seeking to construct and operate a wind farm comprising 16 turbines with blade tip heights between 180 and 230m and a generating capacity of around 90MW. The site is located at Craiginmoddie in South Ayrshire, with the nearest trunk road being the A77(T) which lies approximately 12km to west. The SR states that the site forms part of a larger area which was the subject of the S36 application to extend the existing Hadyard Hill wind farm. That application was withdrawn.

Assessment of Environmental Impacts

The scoping for potential environmental impacts associated with Traffic and Transport are dealt with in Section vi of the SR. This states that the thresholds indicated within the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic are to be used as a screening process for the assessment.

The Environmental Impact Assessment (EIA) Report will also be undertaken in accordance with the Transport Assessment Guidance (Transport Scotland 2012). Transport Scotland is in agreement with this approach.

We note that the SR also states that the study area for the traffic and transport assessment will effectively be the public highway network in the vicinity of the site which would be used during the construction and operation of the wind farm. We note, however, that the access route to the site is identified as being the A77(T) and then onto the B7023. As the trunk road forms part of the route to site, Transport Scotland will require potential trunk road related environmental impacts such as driver delay, pedestrian amenity, severance, safety etc to be considered and assessed where appropriate (i.e. where IEMA Guidelines for further assessment are breached).

It is noted that any impacts associated with the operational and decommissioning phases of the development are to be scoped out of the EIA. We would consider this to be acceptable in this instance.

Abnormal Load Route Assessment

The SR states that the applicant is looking at a number of options for the transportation of Abnormal Loads, including utilising the A77(T) and then onto the B7023 to access the Site from the north. We also note that the proposed blade length is approximately 81.5m. Transport Scotland will require to be satisfied that the size of turbines and blades proposed can negotiate the selected route and that their transportation will not have any detrimental effect on structures within the trunk road route path.

A full Abnormal Loads Assessment report should be provided with the EIA Report that identifies key pinch points on the trunk road network. Swept path analysis should be undertaken and details provided with regard to any required changes to street furniture or structures along the route. We would also state that any proposed changes to the trunk road network must be discussed and approved (via a technical approval process) by the appropriate Area Manager prior to the movement of any abnormal load.

I trust that the above is satisfactory and should you wish to discuss any issues raised in greater detail, please do not hesitate to give me a call.

Yours faithfully

REDACTED

John McDonald

**Transport Scotland
Roads Directorate**

Crosshill, Straiton and Kirkmichael Community Council - Consultation Response

Melrose J (Joyce)

From: John Haston <John_Haston@hotmail.com>
Sent: 20 July 2020 18:59
To: Econsents Admin
Cc: Brown C (Carolanne); Patrick Lorimer
Subject: Request for Scoping Opinion - Craiginmoddie Wind Farm
Attachments: Craiginmoddie Scoping Response 1.pdf

Dear Econsents Unit

Please find attached our community council's response to the scoping report for Craiginmoddie wind farm.

For openness, we had two versions of our response, and this one was chosen by a majority vote of 4 votes to 3.

Kind regards
John Haston
Secretary
Crosshill, Straiton and Kirkmichael Community Council

This email has been scanned by the Symantec Email Security.cloud service.

Craiginmoddie Wind Farm Scoping Report Responses from Crosshill, Straiton and Kirkmichael Community Council

We welcome the opportunity to be involved in the early stages of the Proposal as it is located partly within our area and has impacts on our residents, the landscape, wildlife and many other aspects.

Q1: Confirmation is sought that the identified development plan policies are appropriate.

We agree that the National Planning Framework 3 and Scottish Planning Policy (SPP) 2014 should be considered. We also agree that consideration be given to the South Ayrshire Local Development Plan (SALDP) and the Proposed South Ayrshire Local Development Plan (PLDP2).

Q2: Are there any further policies which would be considered likely to be material to the determination of the application?

The Ayrshire Joint Structure Plan. Although this was published in 2009 it is clear it was intended as a long term policy as it contains a vision for Ayrshire in 2025 and there are numerous references to 2020 and beyond.

South Ayrshire Wind Capacity Study (amended 2018)

The policies of the UNESCO Galloway and Southern Ayrshire Biosphere. The Proposal is in the Transition Zone of the Biosphere.

The height of turbines means there must be lighting. Therefore the criteria required to be awarded Gold Tier status for the Galloway Forest Dark Sky Park should be examined.

Q3: Can it be confirmed that a 45km study area for the LVIA is considered to be appropriate starting point for the LVIA, but that approximately 20km is suitable for the detailed assessment of likely landscape and visual significant effects?

SNH recommends that an initial study of 45km be considered and we agree with this. The size of turbines would suggest to us that a detailed assessment of landscape and visual effects should be extended to 30km.

In addition to the above we have noted the following:

- At points 5.44, 5.45 and 5.47 there are references to screening by trees and forest cover. It is not appropriate to use trees or forest as screening as by their very nature these are not permanent features in the landscape. For this reason planning guidance explicitly rules out using vegetation as screening.
- The Applicant also states that Bargany and Kilkerran have woodlands which would help screen. These are likely to be policy woodlands and therefore deciduous trees which would therefore only give screening for approximately six months of the year.
- At 5.48 The Applicant states: *"Beyond 10km to the east, the study area covers a large part of the Irish Sea where there are few visual receptors"*
The receptors could include those on fishing trips, sightseers to Ailsa Craig, passengers on the Waverley, cruise ship passengers, the sailing fraternity and the tourists on ferries arriving in the area. The impact could be seen as significant.

Q4: Are the proposed viewpoint locations considered to be suitable for the LVIA?

No. As the Applicant concedes these are only provisional viewpoints and consultation requires to be undertaken

with South Ayrshire Council and SNH. In addition we would recommend that local consultation be undertaken prior to agreeing the final list. We agree with the Applicant that night time viewpoints also need consideration as do views from the coast.

Q5: Confirmation on the approach to the assessment of likely effects on wild land is requested

At point 5.26 The Applicant states that: *"There are only three WLAs to the south of the Highland Boundary Fault line and only one partly within the 20km radius of the proposed development, namely Merrick WLA. This is located to the south-east of the study area, at a range of approximately 8km from the proposed development and covering a large part of the Galloway Hills. While there is already an influence on the WLA from existing Hadyard Hill, Dersalloch, Arecleoch, Kilgallioch, Mark Hill and Tralorg wind farms, the cumulative effect of the proposed development will be assessed as part of the EIAR."*

The cumulative effect is likely to be significant.

At point 5.27 The Applicant states that: *"As the proposed development is located outside the WLA, it would not be possible for it to give rise to direct effects on the wildness qualities of the WLA. It may, however, have adverse effects on how these qualities are experienced from within the WLA and this will be evaluated in the context of the existing influence from baseline wind farms noted above. The cumulative effect on wildness qualities will also be evaluated as part of the EIAR."*

Again the cumulative effect is likely to be significant.

Q6: Can it be confirmed that this approach to the methodology and inclusion of schemes for the cumulative assessment is considered to be appropriate?

Point 5.72 Scenario 4 would be the preferred one.

Q7: Is the proposed study area and approach to the RVAA set out above considered to be appropriate?

Given the height of the proposed turbines we consider 2km to be too small an area of study. Our initial research indicated many properties will be impacted by the Proposal. Impacts include 'Overbearing' and Shadow Flicker.

The Applicant should consider Overbearing (a term used by Reporters when the impacts are unacceptable). Using the algorithm derived from 53 determinations from 14 Decision Notices involving 13 Reporters in Scotland between 2009 and 2017, it was possible to quantify which properties would suffer from the proposed wind farm being overbearing and result in unacceptable impacts to the quality of life at the property. There are 24 properties which have a high probability that the wind farm would be overbearing (based on a model of 53 Reporters' findings). These are to south along the Balloch valley, and to the north west towards Dailly. The village of Dailly is on the margin of 'overbearing' but the 27 properties on the southern edge would be directly impacted by open views of nearly all the turbines (Annex 1). This combined impact should be highlighted and considered, as well as the cumulative effect on the rest of the houses in Dailly.

Shadow Flicker; there are 4 properties that would fall into 'unacceptable Shadow Flicker' by agreed definitions, 3 of which are outside of the 10x rotor limit. The 10x rotor limit is based on research undertaken in the Netherlands on flat surfaces and does not take into account the undulating nature of the landscape and the positioning of the turbines on ridge lines. Modern wind farm planning software is capable of calculation beyond the 10x rotor limits, and the cost is low, so the Applicant should undertake full analysis. Furthermore, the 'narrow window' statement is equally based on out-of-date research. While narrow apertures intensify shadow flicker, the effects can be experienced in open land without any apertures. Indeed the aperture effect also needs to be taken into account when considering screening/foliage as their presence can intensify the shadow flicker impacts rather than reduce them, as it often implied. (Papers available).

There are an additional 4 properties that would have marginal shadow flicker impacts and also need to be taken into account as they are beyond 10x rotor diameters. (Annex 2)

Q8: Are there any other relevant consultees who should be consulted about the LVIA process?

The Galloway and Southern Ayrshire Biosphere. Staff at the Biosphere are familiar with the area and are therefore ideally placed to offer informed observations.

Save Straiton for Scotland. Board members have intimate knowledge of the area and can call on the services of key supporters (also local) to provide expert analysis. They have been invited by Reporters to co-ordinate local representation and played an equal role to that of the local council at Public Inquiry.

The owners of the Walled Garden Camping and Caravan site at Kilkerran.

Straiton Village Cooperative.

The Galloway National Park Association. Again this organisation has intimate knowledge of the area and their members are from a variety of local businesses and organisations. This group should be asked if construction of Craiginmoddie Wind Farm would jeopardise the chances of achieving National Park status and becoming Scotland's third National Park.

John Muir Trust. They should be consulted regarding the impacts to the Merrick Area of Wild Land.

Mountaineering Scotland

The Scottish Dark Sky Observatory

VisitScotland

Q9: Is the proposed scope of assessment set out above deemed to be appropriate?

Consultation with the Ayrshire Rivers Trust should also be undertaken.

Q10. Are the distances set out above sufficient for survey purposes?

No. Given the height of the proposed turbines (up to 230m) and that they would sit alongside turbines approximately half their height (Hadyard Hill) the cumulative impact on cultural assets has the potential to be very significant. We would like to see the distances extended (as a minimum) from 2km to 5km; from 5km to 12km; and from 20km to 30km. (This would ensure important assets in Alloway and Ayr, and Glenapp Castle and gardens are included) The Applicant again refers to trees providing screening; *"Other assets are enclosed within wooded landscape settings and would not be readily visible and seen together with the proposed development."* Vegetation cannot be relied upon to provide screening, woodland can be felled, decimated by forest fires or disease (Larch disease and Ash die back).

Q11: Do you agree with the conclusions and recommendations of the ecology Reports?

Broadly agree.

Q12. Are there any other stakeholders that should be consulted as part of this process?

Scottish Wildlife Trust
Saving Scotland's Red Squirrels.

Q13. Are there any other stakeholders that should be consulted as part of the ornithology assessment?

In addition to the South Strathclyde Raptor Study Group the Dumfries and Galloway Raptor Study Group should be consulted as the Proposal is close to the border of Dumfries and Galloway.

Q14. Please confirm if the above can be scoped out of further assessments.

Definitely not. The traffic route is unclear but should it use the road U27 from Cloyntie to Dalwyne, it passes by Auchalton Meadow SSSI Site and areas of ancient woodland. The road is narrow and would almost certainly require widening which could have serious impacts for the aforementioned.

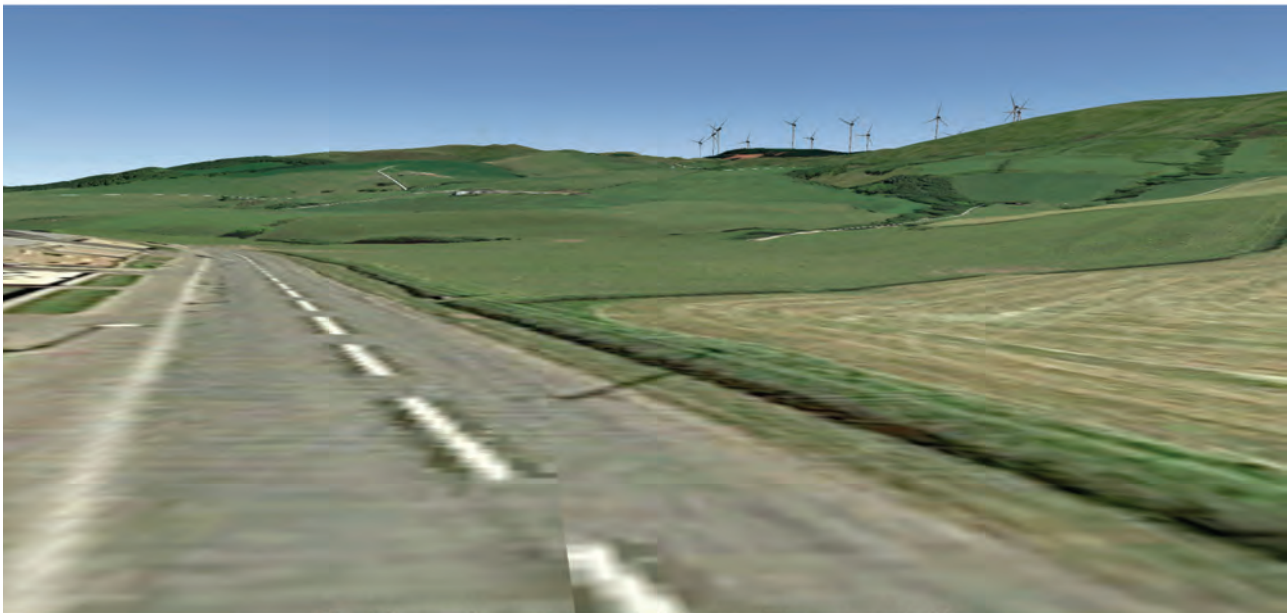
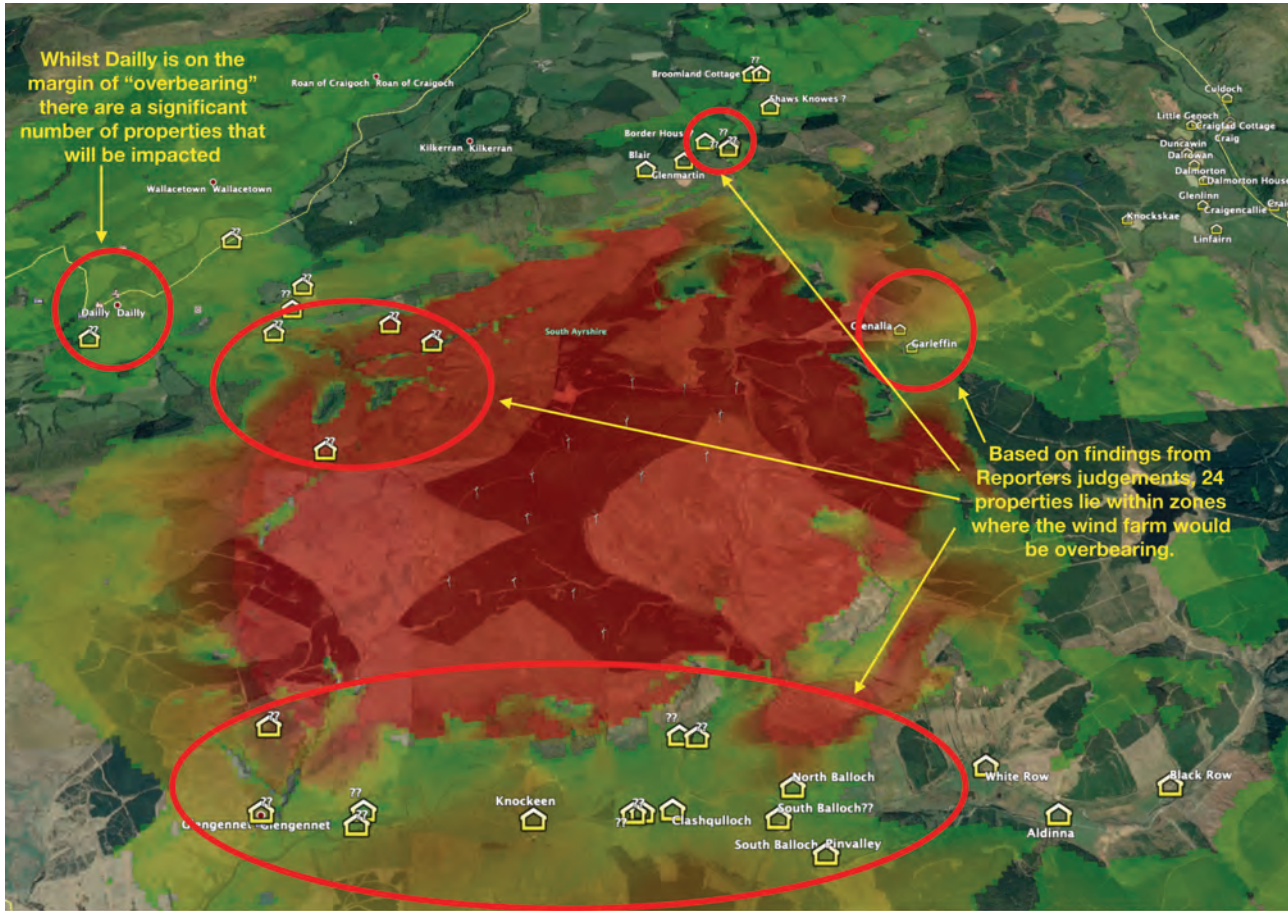
Q15: Are there any other relevant consultees who should be contacted with respect to the other environmental issues?

The Scoping Report has concentrated on Landscape and Environmental issues. We would like to know how the Applicant would assess the impacts on tourism and recreation, in particular National Cycle Route 7. The Applicant states *"At its closest it comes within very close proximity of the proposed development, following the minor road between South Balloch and Crosshill."* In fact the boundary of the Proposal follows NCR7 for several kilometres. This is a popular road for cyclists and tourists and may suffer from shadow flicker which the Applicant incorrectly states *"only occurs inside buildings"*. It is possible to see turbine blade shadows moving across roads when the recognised orientation occurs and the sun is low. Given that there are a number of the proposed Craiginmoddie turbines that would be very close to the NCR7 cycle route and to its south west it is likely that this effect may occur along this stretch of the cycle route and creating a disconcerting optical event to visiting tourists using this route.

The Applicant also states that the rail line from Maybole to Stranraer would not be impacted by their Proposal. We would disagree with that and suggest it is not scoped out of the EIA Report.

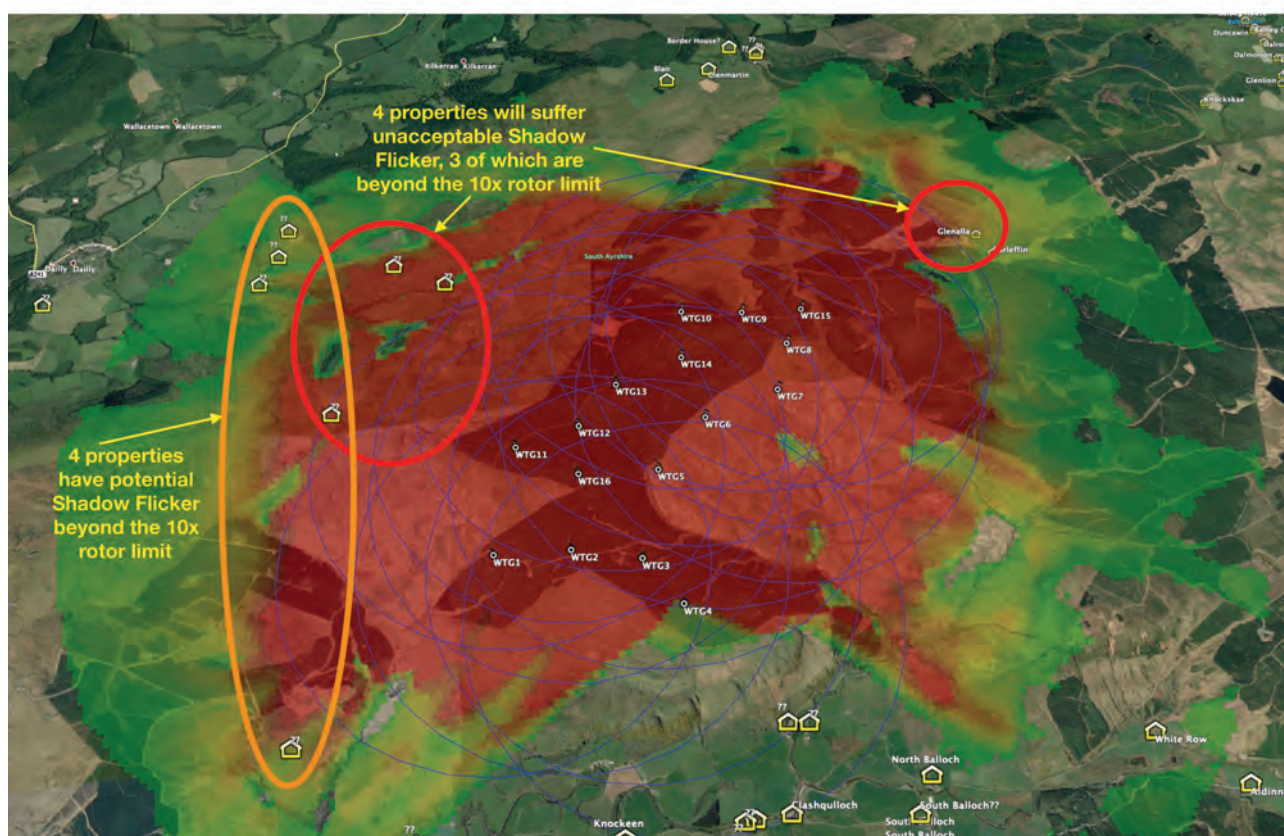
In addition the access route has not been adequately described so we are unable to comment in detail on this.

Annex 1



**Turbines viewed from Eldinton Terrace, Dailly
(road from Maybole to Girvan)**
This is on the margin of being considered "overbearing"
however, there are 27 properties on this road with similar visual impact

Annex 2
Shadow Flicker



Shadow Flicker diagram. Red is area with levels above recommended limits, to green where Shadow Flicker will occur but below recommended limits. Blue circles are 10x rotor limits

Dailly Community Council - Consultation Response

Melrose J (Joyce)

From: Secretary Dailly <daillycc@outlook.com>
Sent: 20 July 2020 12:52
To: Econsents Admin
Cc: Brown C (Carolanne)
Subject: Request for Scoping Opinion for Craiginmoddie Wind Farm - ECU00002080
Attachments: Craiginmoddie WF ECU00002080.pdf

Good Afternoon

Please find attached our response to your Request for Scoping Opinion for Craiginmoddie Wind Farm - ECU00002080.

Please do not hesitate to contact the undersigned if there are any questions.

Kind regards
Helena Menhinick
Secretary – Dailly Community Council

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CRAIGINMODDIE WIND FARM SCOPING REPORT RESPONSE FROM DAILY COMMUNITY COUNCIL

Q1: Confirmation is sought that the identified development plan policies are appropriate.

POLICY PLANS

In the first instance, we do not feel that this Scoping EIA is complete.

Referring to 2.8 of the Scoping:

2.8 In this case, the Proposed Development (as detailed within Section 4 of this Report) is of a type described within Schedule 2 as an installation for the harnessing of wind power for energy productions. It is not located within a 'sensitive area' as defined by the EIA Regulations, however, the project would exceed both of the applicable thresholds as it involves more than two wind turbines with hub heights of more than fifteen metres.

Under Schedule 2 Developments: An electric line installed above ground (a)with a voltage of 132 kilovolts or more; (b)in a sensitive area; or (c)the purpose of which installation is to connect the electric line to a generating station the construction or operation.

Per 3.9 of the Scoping - Grid connection:

3.9 A grid connection would be required to feed the electricity generated by the wind farm into the electricity network for the operational period of the project. The final details of the grid connection, including the precise route and an assessment of any impacts on the environment would be determined by the local Network Operator at a later date. The new grid connection may be subject to a separate design and consent process under Section 37 of the Electricity Act 1989.

A wind farm array with no timeously designed connection detail, to deliver what it produces, to the end users, is negligent in relation to the project definition. It is our choice to fully inform this Scoping Report in accordance with Prince2 Project Management techniques and protocols that all information required to make a fully informed business case must be included before a project scope can be defined.

We agree to National Planning Framework 3, Scottish Planning Policy (SPP) 2014 being used. Also, that South Ayrshire Local Development Plan (SALDP) and the upcoming Proposed South Ayrshire Local Development Plan (PLDP2) be used.

Regarding Spatial Frameworks (Table 4.1) we note that should the National Park be approved this would take the Proposed Development from a Group 3 site to a Group 1 site and this should be **scoped-in**.

Q2: Are there any further policies which would be considered likely to be material to the determination of the application?

POLICY PLANS

How does the proposed development impact on Scotland's 'Place Principle' and other headline governmental policies including how it impacts on opportunities to deliver Inclusive Growth and Wellbeing in the local settlements and communities.

Inevitably, we will see an updated and revised version of the May 2019 Scottish Government's National Performance Framework (NPF) released or refocussed to reflect such fundamental publications as Benny Higgins' "Towards a Robust, resilient wellbeing economy for Scotland", June 2020.

This pivotal work by Benny Higgins indeed deploys the latest ideas and techniques that adopt the NPF and draws out fundamental issues and themes. Our response to this Scoping EIA turns on Benny Higgins' commentary – part cited here – and the Report's Implementation section 5.25, as highlighted:

Moreover, to make our carbon targets realistic we must address the emissions related to transport and agriculture. We must also recognise that natural capital goes beyond carbon related dimensions to encompass the natural beauty of our country that we must protect and develop. By doing so we can underpin the recovery of tourism and hospitality which is a fundamental characteristic of Scotland's brand.

Trust must lie at the heart of a robust, resilient wellbeing economy. Since the global financial crisis, trust in many components of society has been diminished. During this crisis some have restored trust while others have eroded it further. It is the glue which binds the pillars of capital together and reinforces our sense of belonging. Our approach to economic recovery must reflect the importance of economic growth, but in a manner that builds trust. Together, we can pursue our aims with a level of confidence that is pivotal to sustainable prosperity in Scotland.

Section 5.25 Implementation

The economic recovery will be a long haul. But the action needs to start now. The Scottish Government needs to define and execute its recovery plan with purpose and urgency, in partnership with business and other key stakeholders. The Scottish Government should publish its response to our proposals and set out its strategy and initial action plan for economic recovery by the end of July. In order to maintain momentum, it should publish regular updates on that strategy and its execution over at least the next year.

Our recommendations are diverse and wide-ranging. Implementing them will create many workstreams and involve multiple partners and stakeholders. It is not for us to prescribe in detail of how each one should be taken forward. But, pace, alignment and coherence in the execution of the recovery plan will be required. We hope that the Scottish Government will adopt a streamlined and strategic approach and will take the opportunity to revisit any structures and processes which may stand in the way of the focused, thoughtful but urgent action that the recovery demands.

Taking above into account and aligning ourselves with the New Normal (post Covid Pandemic) situation, we must focus on the Assessment of Value and Costs as Outcomes of the Proposed Development.

Consideration should be given to the UK Green Book Investment Appraisal (2018 edition) used by the Scottish Government. This highlights the more recent informed complete asset

value and cost of development with the increase or decrease in value attributable to a single development that is under appraisal. Deferring to established Economic techniques we need to internalise externalities in a project: this means that the downside aspects of a project MUST be reflected and considered within the whole project. In conjunction, Prince2 Project techniques, demand that they cannot simply be ignored.

In context, the aggregate effect of a Major National and International Development of this magnitude – with visual impacts of 30km or more distance, to cite one example – is to diminish the asset value of every property adversely affected by the development and more acutely in this Scoping Report the asset value of Scotland's Natural Assets is diminished by the development.

This must then be assessed with reference to "The Green Book" because it reflects the loss of Tourism, Local Business, Leisure, Destination Visits and negatively impacts on some types of SME businesses (such as Wilderness Trails training, vacations and SME Team Building); Airbnb vacations stays, hotel, golf and culturally-focused visits must all be assessed and offset against the proposed benefits.

Relating to Prince2, we know the size of the battery storage containers and how far apart they must be - Section 3.8 - we know how many and how high the windmills are to be and the height of the nacelle – 148.5m – plus we know turbines would generate power for all wind speeds between 4m/s and 25m/s. Yet, nowhere is stated the total designed electricity generation envisaged.

Therefore, there is no Prince2 Project outcome that can be set against a negative outcome of the project. A fundamental failure to comply with The Green Book principles.

Per 4.9 of the Scoping – *A successful, sustainable place* – "*we have a growing low carbon economy which provides opportunities...*". More emphasis is required on 'successful' and 'place', and opportunities for 'inclusive growth' as well as a broader description of 'sustainable' – ie long-term survival and resilience of the communities affected.

Per 4.13 – *'...recognised as an opportunity to improve the long-term resilience of rural communities.'* How will the development impact on the long-term resilience of this community?

Other policies to consider include Ayrshire Joint Structure Plan 2009 – valid vision to 2025, South Ayrshire Wind Capacity Study – amended 2018, UNESCO Galloway and Southern Ayrshire Biosphere Policies.

Q3: Can it be confirmed that a 45km study area for the LVIA is considered to be appropriate starting point for the LVIA, but that approximately 20km is suitable for the detailed assessment of likely landscape and visual significant effects?

No. We agree to the 45km study area for the LVIA, however due to height of the turbines, up to 230m, we feel that 30km for landscape and visual effects is more appropriate. We do not agree to the ZTV at 20km.

We understand that for turbines 150m and over, SNH recommends detailed night-time lighting assessment. Lighting can be visible for considerable distances, and for these 230m high turbines a distance of probably 30km should be considered - Galloway Dark Skies Park must therefore be consulted.

Visual policy and good practice guidelines require to be followed, however, the EIA should also reflect the impact on local residents and communities that might fall outwith the parameters of these guidelines. For example, the people of Arran will have full sight of the Proposed Development. For your guidance, the turbines on the Mull of Kintyre are visible from Barony Hill and Hadyard Hill areas.

Per 5.11 of the Scoping - The LWCS describes the host landscape as follows;

'Although the large scale and simple landform and land cover of these uplands could relate in principle to larger turbine typologies, the narrowness of parts of this landscape and its proximity to the well settled Stinchar and Girvan valleys and the sensitive Rugged Hills, Lochs and Forest (21) are key constraints especially to very large turbines.'

The implication at several stages within the Scoping is that the Proposed Development will 'fit in' with the existing Hadyard Hill turbines. No - they will not. The new turbines are much taller and on much higher elevations. The existing turbines are 110m and generally located within a basin.

We note that there are several references to tree and forestry cover – this should not be relevant in any of the Scoping, for example 5.44 – trees are not permanent fixtures, they should not be used as screening and mitigation purposes.

There is concern that the railway lines per 5.62 are being scoped out, these should be **scoped-in**.

Q4: Are the proposed viewpoint locations considered to be suitable for the LVIA?

VISUAL VIEWPOINTS

No. How were these viewpoints decided? Some of the locations do not appear relevant. Some of the views are obscured by vegetation or buildings. Positions are not relevant to the people living in, or visiting, the area. Please consult with SAC, SNH, and local communities regarding viewpoint locations.

Per 5.66 of the Scoping the visual receptors are inadequately defined – they must include all thresholds/points of entry to the two valleys – Stinchar and Girvan.

We understand that these are only provisional but there must be relevance and meaning in the choice. Night-time viewpoints should also be included.

There seems limited reference to views from offshore which are important given the international reputation of this area as one of the world's finest environments for sailing.

Per 5.48 of the Scoping '*Beyond 10km to the east,...*' – this is obviously an error, should read west – to the Firth of Clyde and then the Irish Sea. Visual receptors would include all activity

on the water such as fishing, ferry boat/cruise passengers (Ailsa Craig, Waverley, Glen App), general pleasure boats, sailing.

Also, no consideration has been given to views from the air – airlines to/from Prestwick/Glasgow, private helicopters/light aircraft.

Per 5.52 ‘A **bespoke methodology** will be applied to the assessment of visual effects that may arise from visible aviation lighting, to meet CAA requirements’ – this must be made explicit.

To assist with a better understanding of the visual impact it would be more appropriate to have a 3D scale model of the site showing the proposed turbines within the local landscape in relation to cumulative impact with the other wind farms in the area. Wirelines and photomontages do not convey the actual real-world impact of turbines of this ‘magnitude’ or their ‘overbearing’ nature (as described by Reporters on occasion). Turbine size as represented on wirelines actually appear double the size when directly viewed within the landscape.

From our perspective being on the west side of the Proposed Development, other viewpoints should be considered incorporating the Coastal areas such as Turnberry and Culzean, both of which are major visitor attractions.

As per 5.51 *visual effects are experienced by people at different locations around the study area, at static locations (for example settlements or viewpoints) and from sequential locations when travelling along routes. Visual receptors are the people who will be affected by changes in views at these places, and they are usually grouped by what they are doing at those places (for example residents, motorists, recreational users etc.)* – this should assist in locating suitable viewpoints.

Per 5.62 regarding the railways – this should **not** be scoped out – sequential locations.

Q5: Confirmation on the approach to the assessment of likely effects on wild land is requested

WILD LAND

Per 5.26, 5.27 and 5.28, as previously stated we believe that the 20km radius should be extended to 30km – this would take into account features such as the WLAs. The cumulative effect from the existing Wind Farms mentioned together with the Proposed Development, and other wind farms in Scoping or Consultation will be significant and must be **scoped-in**.

Q6: Can it be confirmed that this approach to the methodology and inclusion of schemes for the cumulative assessment is considered to be appropriate?

CUMULATIVE VISUAL

Per 5.68 regarding '*Scale disparity*' – again this must be made explicit. As mentioned under Question 3 the existing turbines are 110m on lower elevations and generally within a basin, and the proposed are higher at 230m on higher elevations on ridgelines and near hilltops.

There are now too many wind farms being Scoped or Consulted upon as well as those currently in operation, therefore, **Scenario 4 is appropriate under 5.72 and it is essential that it is scoped-in.**

Q7: Is the proposed study area and approach to the RVAA set out above considered to be appropriate?

RESIDENTIAL VISUAL AMENITY

No. We do not consider the approach to the RVAA appropriate. With heights of this 'magnitude' at 230m the study distance should be greater at say 5km.

The Applicant should consider Overbearing (a term used by Reporters when the impacts are unacceptable). Using the algorithm derived from 53 determinations from 14 Decision Notices involving 13 Reporters in Scotland between 2009 and 2017, it was possible to quantify which properties would suffer from the proposed wind farm being overbearing and result in unacceptable impacts to the quality of life at the property. There are 24 properties which have a high probability that the wind farm would be overbearing (based on a model of 53 Reporters' findings). Properties particularly in the Stinchar Valley – for example, and in particular, Glengennet along to Balloch will be very susceptible to detrimental visual amenity. Glenalla in the north-east will also be severely affected.

The village of Dailly is on the margin of 'overbearing' but the 27 properties on the southern edge would be directly impacted by open views of nearly all the turbines (Annex 1). This combined impact should be highlighted and considered, as well as the cumulative effect on the rest of the houses in Dailly.

An RVAA should be carried out particularly for those in Dailly for example along Eldinton and Hadyard Terraces, Linfern Road, the outlying farms of say Dobbingstone, Knockrochar, all properties on the other side of the valley towards the coast for example at Wallacetown, Blair, Dalquharan, Newlands, Kilgrammie and Farden.

Q8: Are there any other relevant consultees who should be consulted about the LVIA process?

UNESCO Galloway & Southern Ayrshire Biosphere
 Mountaineering Scotland
 Galloway National Park Association
 John Muir Trust
 Dark Sky Observatory
 Ayrshire Alps and Ayr Burners (cyclists)
 South Ayrshire Local Access Forum
 British Horse Society - Scotland

Q9: Is the proposed scope of assessment set out above deemed to be appropriate?

HYDROLOGY/HYDROGEOLOGY/GEOLOGY

No. The proposed scope of assessment is not appropriate.

Ayrshire Rivers Trust must also be consulted as they are very familiar with the area and coordinate with SEPA on a range of issues.

There is limited reference to water contamination and flow rates to private water supply. Through experience we know that this is a very relevant and concerning issue. There is also the issue of dirty/contaminated water run-off from turbines/nacelles.

Borrow pit assessment must be addressed with rigour, again through experience borrow pit size and location can be an issue.

Full hydrogeological assessments are essential for all private water supplies (PWS) within approx. 2km. This should include all types of sources and catchment. Local properties with PWS have no alternative supplies available and this type of development can result in reduction in quality and quantity, lower water tables and possibly complete destruction of supply. Mitigation for this is crucial – the use of bowzers and helicopters (as previously suggested by other companies) is unacceptable.

Q10. Are the distances set out above sufficient for survey purposes?

ARCHAEOLOGY/CULTURAL HERITAGE

No. As previously mentioned, due to the 'magnitude' of the turbine height at 230m we suggest increasing the study areas as follows: 2km increased to 5km, 5km increased to 10km, 20km increased to 30km. Other historical sites relevant to this area of South West Scotland would then be included in the study area such as NTS Culzean Castle and Gardens, NTS Souter Johnnie's cottage, NTS Alloway Robert Burns Centre, HES Crossraugel Abbey, Glenapp Castle, HES Loch Castle at Loch Doon.

Q11: Do you agree with the conclusions and recommendations of the ecology Reports summarised above?

ECOLOGY

No. We require information regarding the date these surveys were undertaken. More detail is required regarding Gavia Environmental and its status as an independent organisation.

Q12. Are there any other stakeholders that should be consulted as part of this process?

Ayrshire Bat Group and Bat Conservation Trust Scotland Branch

Forestry and Land Scotland

Saving Scotland's Red Squirrels

Scottish Badger

Scottish Wildlife Trust

South West Scotland Environmental Information Centre (SWSEIC)

Q13. Are there any other stakeholders that should be consulted as part of the ornithology assessment?

ORNITHOLOGY

Galloway & Southern Ayrshire Biosphere would be able to advise on others, say Scottish Raptor Study Group and Hen Harrier Society.
South of Scotland Golden Eagle Project.

A desk study and search of publicly available information has been carried out, what were the dates of said studies, and is the distance of 5km sufficient for the height of the turbines. The surveys carried out between October 2011 and April 2013 to inform the proposed Hadyard Hill extension (SSE, 2015) are over 7 years old and should be updated, turbine heights were significantly lower. There does not appear to be any mention of Golden Eagles, even though there is a population of Eagles centred on Straiton.

Q14. Please confirm if the above can be scoped out of further assessments.

TRAFFIC

No to the scoping out request of: *the effects of operational traffic on existing traffic flows; the environmental effects of any physical works required to facilitate turbine component delivery; and the environmental effects of traffic generated by the Proposed Development during decommissioning. The volume of decommissioning-related traffic is anticipated to be less than the level experienced during the construction phase and could more accurately be estimated at a later date.*

The routes have not yet been defined. Construction work is in close proximity to properties on both Barr and Dailly sides. All roads off the main 'A' and 'B' roads are generally narrow, badly maintained and not fit for heavy loads and increased traffic flow. We have experience of issues relating to operational traffic whether before, during or after construction. We would therefore include decommissioning traffic as well. Construction traffic noise assessments should also be **scoped-in**.

Location of borrow pits should also be included, as there might be an issue with blasting and transportation.

Per 5.148 indicating that a formal Transport Assessment is not anticipated to be required for temporary construction works – under what criteria? Construction and operational traffic assessment must be **scoped-in**.

Q15: Are there any other relevant consultees who should be contacted with respect to the other environmental issues?

SOCIO-ECONOMICS

Per 5.123 Socio-economics – the indication is that *there are no recognised standards or methodologies for assessing the socio-economic, recreation and tourism effects of windfarms, and therefore the Study Areas will be defined based on professional judgement –*

We require detailed information on who will provide professional judgement regarding this? We believe this statement to be untrue, cynical and wholly inadequate, there are methodologies applying to all other aspects of investment – this must be revisited including in relation to impact on opportunities for Inclusive Growth, Visitor Economy, Wellbeing and the economy generally.

There is insufficient emphasis on the positive and negative impacts for local residents, businesses, jobs, services, and visitors. There is acknowledgement of Potential Significant Effects under 5.131, 5.132, 5.133 of the Scoping Report – these must be quantified, with an explanation of how, and to what extent, the local communities will benefit or be negatively impacted. Revenue and profit produced by the wind power generated should be compared with its impact on the economic prospects for the local communities, and a formula for amelioration commensurate with this should be provided.

NOISE AND VIBRATION, AND SHADOW FLICKER

Per 5.155 *Vibration effects from construction activities and during operation will not be perceptible at residential properties and will be scoped out of the EIA.* No. This is incorrect. Vibration Impact Assessments for both construction and operational activities require to be included and must be **scoped-in**.

Per 5.165 We understand that the actual turbine model has not been agreed, however, we do not believe that enough emphasis has been given to the increased noise impact. Any assessment must recognise the impact of varying wind directions, speeds, distance from turbines and different topographies, not just random samples.

Experience of living with the existing Hadyard Hill for approx. 16 years has demonstrated that LOW wind speed conditions can give greatest disruption to near residents. Excessive noise is experienced at properties that are not necessarily downwind of existing turbines. Residents of Dailly, Wallacetown and Lindsayston experience noise issues from the existing Hadyard Hill wind farm depending on strength of wind and direction. Due to the increased height and turbine elevations relative to the Hadyard Hill turbines, this noise impact will be more severe and affect a much wider area.

More detail is required for cumulative assessments particularly regarding noise in all forms, and shadow flicker. There is already mitigation in place for existing Hadyard Hill wind farm. The array closest to Delamford and Dobbingsstone is switched off under certain conditions due to unacceptable noise levels.

How will this be included in any assessments?

Due to increased size and elevations, impact of noise will be more severe. Local knowledge and experience are key to the correct identification of assessment locations for noise sensitive receptors.

Per 5.183 of the Scoping states *'It only occurs inside buildings where the flicker appears through a narrow window opening.'* Local experience clearly demonstrates that this is untrue – it can be experienced through large windows, in gardens, on roads, etc.

Per 5.184 *‘... Flicker effects are generally only expected to occur within a distance of ten rotor diameters of the wind turbines, therefore, the assessment will only consider residential properties within this distance.’*

Previous experience of Hadyard Hill Wind Farm and Hadyard Hill Wind Farm Extension Proposal demonstrates that properties outside 10 rotors will be exposed to shadow flicker. South Ayrshire Council recommends 2.5km for shadow flicker. Assessments need to be done for all properties and roads within 2.5km.

There are 4 properties that would fall into ‘unacceptable Shadow Flicker’ by agreed definitions, 3 of which are outside of the 10x rotor limit. The 10x rotor limit is based on research undertaken in the Netherlands on flat surfaces and does not take into account the undulating nature of the landscape and the positioning of the turbines on ridge lines. Modern wind farm planning software is capable of calculation beyond the 10x rotor limits, and the cost is low, so the Applicant should undertake full analysis.

Furthermore, the ‘narrow window’ statement is equally based on out-of-date research. While narrow apertures intensify shadow flicker, the effects can be experienced in open land without any apertures. Indeed the aperture effect also needs to be taken into account when considering screening/foilage as their presence can intensify the shadow flicker impacts rather than reduce them, as it often implied. (Papers available). There are an additional 4 properties that would have marginal shadow flicker impacts and also need to be taken into account as they are beyond 10x rotor diameters. (Annex 2)

HEALTH

Per 5.191 *‘...Where no significant effects are likely these are scoped out of the assessment.’* Local experience shows there are significant health issues due to noise and shadow flicker and this must be **scoped-in**.

PROPERTY VALUE

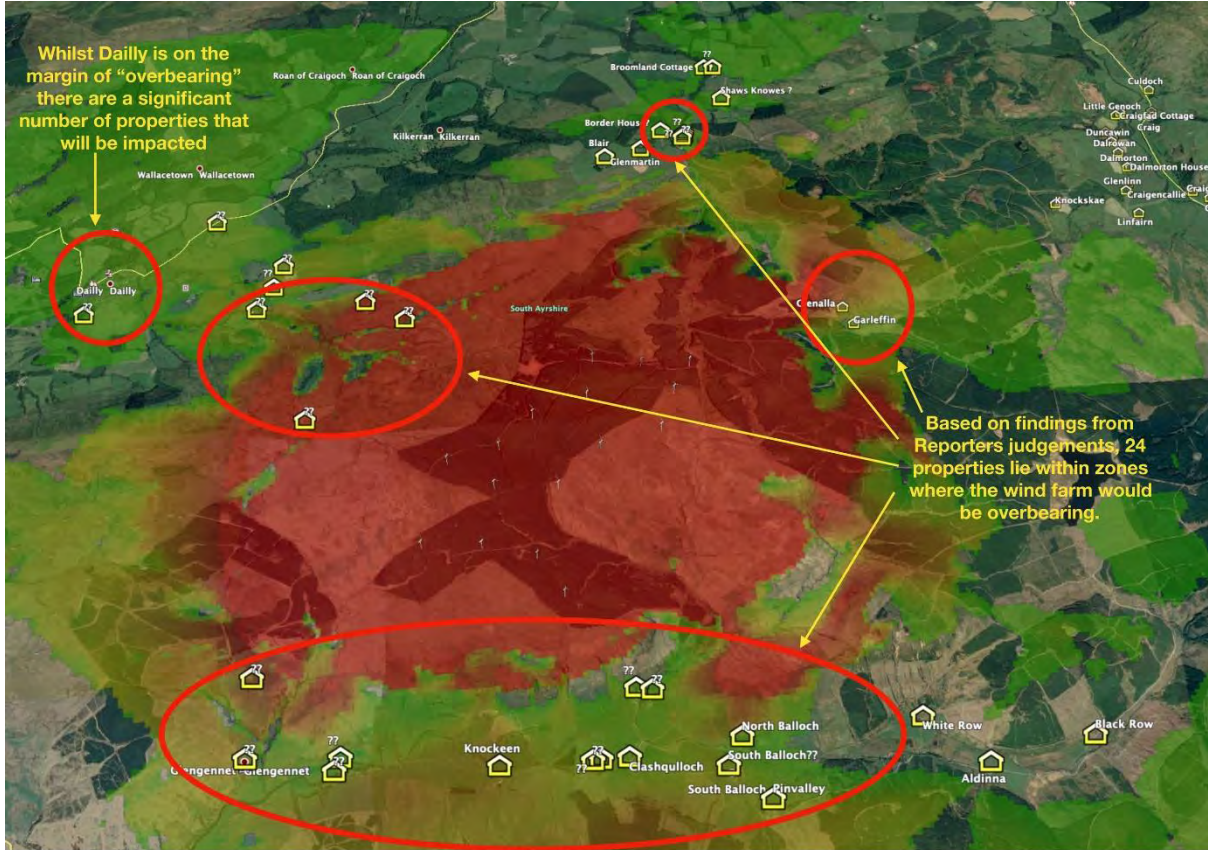
No mention has been made on the negative impact on land and property values. Again through experience it is now known that a number of local properties have been made uninhabitable due to noise and shadow flicker impacts – they are now derelict and their value practically eliminated. Property value must therefore be **scoped-in**.

CONNECTIVITY

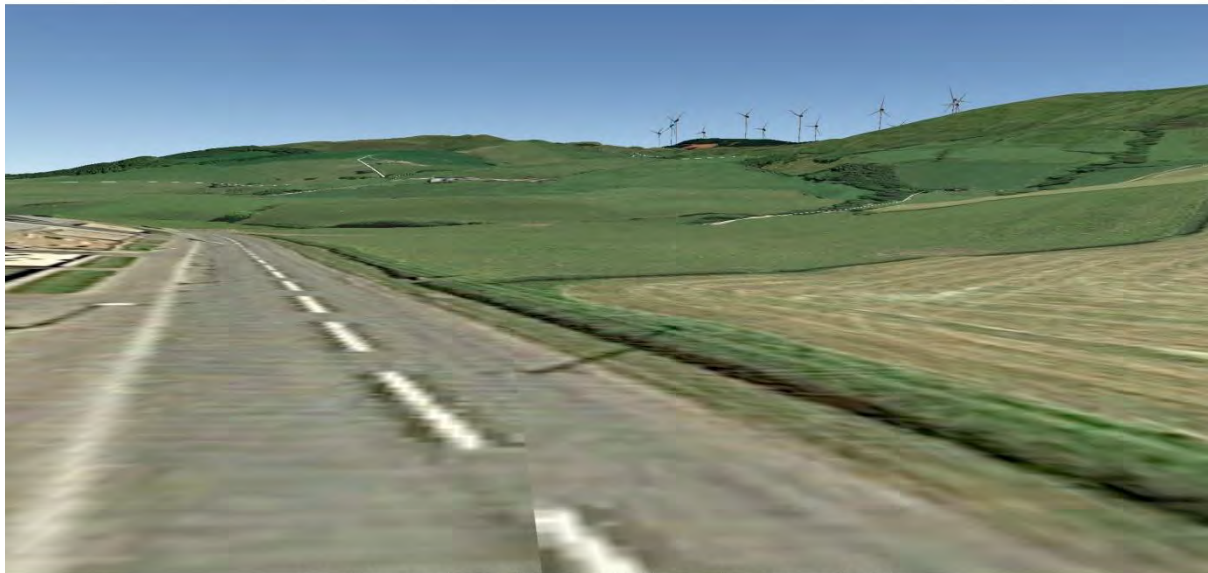
Potential and actual effects on communications including television, radio, internet and telephone connectivity must be **scoped-in**.

Per 5.134 Other consultees should include Mountaineering Scotland, National Trust, Galloway National Park Association, South of Scotland Enterprise (SoSE), South West Scotland Environmental Information Centre (SWSEIC), Southern Uplands Partnership with SHAPE – Sustainable Heritage Areas: Partnerships for Ecotourism.

APPENDIX 1



Overbearing Impact diagram. Red is area where there is no argument there is an overbearing impact, through to Green where some Reporters have found that the overbearing nature of similar wind farms' impact was unacceptable



**Turbines viewed from Eldinton Terrace, Dailly
(road from Maybole to Girvan)**
This is on the margin of being considered "overbearing" however, there are 27 properties on this road with similar visual impact

Shadow Flicker diagram. Red is area with levels above recommended limits, to green where Shadow Flicker will occur but below recommended limits. Blue circles are 10x rotor limits

Marine Scotland Science advice on freshwater and diadromous fish and fisheries in relation to onshore wind farm developments.

July 2020

Marine Scotland Science (MSS) 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 MSS 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. MSS 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 MSS, 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, MSS 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, MSS 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.

MSS 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.

MSS provision of advice to ECU

- MSS should not be asked for advice on pre application and application consultations (including screening, scoping, gate checks and EIA applications). Instead, the MSS 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, MSS 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, MSS can be asked to provide advice on suitable wording, within a planning condition, to secure proposed monitoring programmes, should the development be granted consent;
- MSS 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, MSS should be contacted.

MSS Standing Advice for each stage of the EIA process

Scoping

MSS 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 MSS generic scoping guidelines then ECU should be informed who will then co-ordinate a response from MSS.

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

MSS 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

MSS 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.

MSS 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

MSS 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 MSS is consulted on these programmes.

Wording suggested by MSS 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 Scotland Science and any such other advisors or organisations.
2. The WQFMP must take account of the Scottish Government's Marine Scotland Science's 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 Marine Scotland Science.
3. Thereafter, the WQFMP shall be implemented within the timescales set out to the satisfaction of the Planning Authority in consultation with Marine Scotland Science 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

Scottish Natural Heritage (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, SNH, SEPA, Forestry Commission Scotland, Historic Environment Scotland, MSS 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>.

Marine Scotland Science advice on freshwater and diadromous fish and fisheries in relation to onshore wind farm developments.

July 2020

Annex 1

MSS – 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:

MSS 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 MSS advice, please set out reasons.
1. A map outlining the proposed development area and the proposed location of: ○ the turbines, ○ associated crane hard standing areas, ○ borrow pits, ○ permanent meteorological masts, ○ access tracks including watercourse crossings, ○ all buildings including substation, battery storage;			

○ permanent and temporary construction compounds; ○ all watercourses; and ○ 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;			
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 MSS 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 MSS and accompanied by a map outlining the proposed sampling and control sites in addition to the location of all turbines and associated infrastructure			
7. A decommissioning and restoration plan outlining proposed mitigation/monitoring for water quality and fish populations.			

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 MSS advice, please set out reasons.
1. Any designated area, 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.			