



**Energiekontor UK Ltd**

**Sauchrie Burn Wind Farm**

**Environmental Impact Assessment Scoping  
Report**

**October 2023**



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# 1 INTRODUCTION

## Introduction

- 1.1 Energiekontor UK Ltd is evaluating the potential of land west of Sauchrie, Maybole, Ayrshire ("the Site"), see Figure 1.1, for the development of a wind farm of up to 9 wind turbines (see Figure 1.2), including associated development such as crane pads, access tracks, a substation, a temporary construction compound and a battery storage facility ("the Proposed Development").

## Purpose and Structure of the Scoping Report

- 1.2 The purpose of this Scoping Report is to formally request a Scoping Opinion in accordance with Regulation 12 of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the "EIA Regulations"). Scoping is used to help identify where there is potential for interactions between a project and the environment. It allows an applicant to be clear which of these a local planning authority considers to be the main effects and on which an Environmental Impact Assessment (EIA) should focus.
- 1.3 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 a future 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 if necessary.
- 1.4 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.

## Energiekontor UK Ltd

- 1.5 Energiekontor UK Ltd is a wind energy development company with offices in Leeds, Glasgow and Edinburgh. The company was formed in 1999 and develops onshore wind farms throughout the United Kingdom. The company has built ten wind farms in the UK, including two subsidy-free wind farms in Scotland, with many more in the development process.
- 1.6 Energiekontor UK Ltd is part of the Energiekontor Group. The parent company, Energiekontor AG, was established in 1990 in Bremerhaven in Northern Germany. It has since grown to become one of the leading wind energy companies in Europe, having built more than 140 wind farms across the continent.

## 2 EIA REGULATORY FRAMEWORK

### What is EIA

- 2.1 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 environmental impacts of a proposal.
- 2.2 An Environmental Impact Assessment Report (EIAR), prepared during the EIA process, provides 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 is prepared through an iterative process that usually follows the below stages:
- Screening is the first 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 local 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.
  - 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.
  - Where significant adverse effects cannot be minimised through alterations to the design itself, mitigation measures are considered. Monitoring may also be considered to measure the actual significance of the effect during and post-construction to allow management of mitigation where appropriate.
- 2.4 Once the EIA is completed, the EIAR is submitted to the local planning authority for consideration with the planning application.

## **Screening – Is EIA Required**

- 2.5 The first stage of the EIA process is to screen with the local planning authority whether a development would constitute EIA development.
- 2.6 Development projects that are described within Schedule 1 of the EIA Regulations will always require EIA and are referred to as 'Schedule 1 Developments'. Development projects listed in Schedule 2 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 size, location or nature will require such assessment. A development project that requires EIA is referred to as 'EIA development'.
- 2.7 In this case, the Proposed Development (as described in Section 4) 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. The requirement for EIA is therefore determined on the basis of whether the project would be likely to give rise to significant effects on the environment by virtue of its size, nature or location.
- 2.8 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 Council.

## **Scoping – What to Consider**

- 2.9 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.
- 2.10 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 project.

## 3 THE SITE AND ITS CONTEXT

### The Site

- 3.1 The Site is located approximately 4km south west of Ayr and comprises of commercial forestry and open moorland. The Site sits between the A77 (3.2km to the east) and the A719 (1.2km to the west). The Site lies within the Carrick Hills on an area at approx. 230-260m AOD set between Brown Carrick Hill (287m AOD) to the north and Knowside Hill (282m) to the south. As a result of the topography, views across the hills at high level are often extensive, whilst views from lower elevations surrounding the Site, including the settlements, can be contained.
- 3.2 The nearest larger settlements are Ayr (4km north east), Dalrymple (6km east) and Maybole (9km south). Fisherton and Dunure both lie within 2km to the west and the surrounding landscape is scattered with farms and other rural dwellings.

### Context

- 3.3 There are no existing or consented wind farms within the near vicinity of the Site, the nearest being the consented 8 turbine Kirk Hill wind farm, located approximately 8km to the south, whilst the operational Dersalloch Wind Farm is approximately 15km south east of the Site.



## 4 DESCRIPTION OF THE PROPOSED DEVELOPMENT

### Introduction

- 4.1 This section describes the various elements proposed as part of the project and provides details of what processes will take place at the various stages of the project's lifecycle (e.g. construction, operation, decommissioning).

### The Proposed Development

- 4.2 Energiekontor UK Ltd is investigating the potential for a wind farm development on the Site, consisting of the erection, 35 year operation and subsequent decommissioning of up to 9 wind turbines, each up to 200m in height to blade tip. It is likely that the wind farm would provide up to 59.4MW of generating capacity. The principal elements of the Proposed Development are described in further detail below.

#### Wind Turbines

- 4.3 It is proposed to erect up to 9 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.
- 4.4 Final turbine selection would be made following the grant of planning permission following a tendering and procurement exercise. The EIA will therefore be undertaken on the basis of a candidate turbine design consisting of:
- Maximum height to vertical blade tip of 200m;
  - 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

- 4.5 The principal items of associated development include:
- **Site access** – access to the Site would be taken either via the A719 to the west or via the A77 to the east.
  - **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 and would remain until the end of the decommissioning 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 above, 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 a 50m x 30m 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.
- **Energy storage facility** – a battery storage facility would be installed on part of the temporary construction compound area. The MW capacity of this would be determined post-consent following wind turbine selection.
- **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 45m x 25m and surfaced with coarse aggregate.
- **Transformer housings** – the transformers to step up the voltage exported from each turbine (from 690V to 33kV) 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** – a 15m long by 10m wide single storey building, housing the switchgear and control equipment plus secure storage space.
- **Off-site highway works** – to facilitate wind turbine component delivery, various off-site highway works would be required along the proposed abnormal delivery route.

#### Grid Connection

- 4.6 A grid connection would be required to feed the electricity generated by the wind farm into the distribution 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 Distribution 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.

#### Forestry Management

- 4.7 A block of commercial forestry is located in the western part of the Site. The Proposed Development would be developed in conjunction with the existing forestry management plans in place on the Site and allow for restocking and mitigation planting as necessary. The design would consider the impacts of the associated forestry operations required as part of the Proposed Development and mitigation opportunities would be considered as appropriate.

- 4.8 The EIAR will include details of the existing forestry at the Site and consider the proposed turbine layout, manufacturer's requirements in relation to turbines relatively close to tree crops and the impacts on turbulence and turbine efficiency. It will also set out details of likely tree removal, early felling and short rotation practices.

## **Construction Phase**

- 4.9 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;
- Commissioning of site mechanical and electrical equipment; and
- Reinstatement and landscaping, removal of temporary site offices, reseeding verges and areas around turbine bases.

- 4.10 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.

- 4.11 A detailed programme of works would be produced by the construction contractors prior to the commencement of works on Site.
- 4.12 Should planning permission be granted it is likely that construction hours would be restricted by means of a planning condition imposed by the Council.
- 4.13 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.

## **Decommissioning Phase**

- 4.14 At the end of the operational period the wind farm would be decommissioned. This would involve the complete removal of the wind turbines, transformers, substation, switchgear and other equipment over a period of up to 12 months. The removal of the wind farm components would essentially be the reverse of the construction process.
- 4.15 Energiekontor UK Ltd would provide a decommissioning bank guarantee or insurance bond to ensure that sufficient funds are available at any time during the lifetime of the wind farm to enable all decommissioning works to take place.
- 4.16 The removal of the wind turbines at the end of the operational life of the wind farm would be the reverse of the erection process, involving similar cranes and procedures. The components would be removed off-site to be re-used elsewhere, dismantled and recycled or disposed of as appropriate.
- 4.17 The decommissioning of the turbine foundations would involve removing the upper part of the reinforced concrete foundation. This could be achieved by conventional construction equipment (e.g. excavator mounted pneumatic hammers etc.).
- 4.18 In order to achieve the removal of the upper section, which is approximately 1m deep, a 600mm wide trench would need to be excavated around the approximately 4m diameter upstand to facilitate access for removal of the concrete. All other parts of the foundation would remain in place and no other disturbance of the ground around the turbine would be required.
- 4.19 Once the upstand has been removed, the disturbed area would be reinstated by backfilling with site-derived materials to an agreed method statement, leaving the remaining portion of the foundation approximately 1m below ground level.

## 5 PLANNING POLICY CONTEXT

### Introduction

5.1 This section of the Scoping Report provides an outline of the national and local planning policies, guidance and other material considerations that are potentially relevant to the Proposed Development. It includes:

- The Development Plan
  - The National Planning Framework 4
  - South Ayrshire Council Local Development Plan 2
- Material Planning Considerations
  - Renewable energy framework
  - Onshore Wind Policy Statement
  - Planning Advice Notes
  - Scottish Government Web Based Renewable Guidance

### The Development Plan

5.2 The statutory Development Plan applicable to the Site consists of:

- The National Planning Framework 4; and
- South Ayrshire Council Local Development Plan 2

5.3 Relevant policies are set out below.

### The National Planning Framework 4

5.4 NPF4 was published on 13 February 2023 and combines the spatial framework for Scotland with Scottish Planning Policy for the first time, forming part of the statutory Development Plan.

5.5 Annex A (page 94) of the document explains how NPF4 is to be used. It states:

*"The purpose of planning is to manage the development and use of land in the long-term public interest...Scotland in 2045 will be different. We must embrace and deliver radical change so we can tackle and adapt to climate change, restore biodiversity loss, improve health and wellbeing, reduce inequalities, build a wellbeing economy and create great places."*

5.6 NPF4 contains a spatial strategy, national level development management policies and identification of national developments which are aligned to the strategic themes of the Government's Infrastructure Investment Plan. NPF4 therefore introduces, for the first time, centralised development management policies which are to be applied across Scotland.

- 5.7 Part 1 of NPF4 sets out details of the National Spatial Strategy for Scotland. From the outset, it is clear that tackling climate change and achieving net zero emissions is at the forefront of the National Spatial Strategy:

*"we have set a target of net zero emissions by 2045, and must make significant progress towards this by 2030. This will require new development and infrastructure across Scotland."*

- 5.8 In relation to a key principle of achieving 'sustainable places' NPF4 states that:

*"our future net zero, nature-positive places will be more resilient to the impacts of climate change and support the recovery and restoration of our natural environment. This will help Scotland's places to thrive within the planet's sustainable limits and will maximise the new economic and wellbeing opportunities from just transition to a net zero, nature-positive economy....Our strategy is to transform the way we use our land and buildings so that every decision we make contributes to making Scotland a more sustainable place. In particular, we want to encourage...diversity and expand renewable energy generation...."*

- 5.9 NPF4 continues the planning policy approach of identifying 'national developments', which are defined as developments that strongly support the delivery of the spatial strategy, i.e. are 'needed'. Eighteen national developments are proposed in NPF4 to deliver the spatial strategy, each of which is accompanied by a statement of need and an assessment of lifecycle greenhouse gas emissions. The national development designation does not remove the need for consenting or associated impact assessment to be undertaken for individual projects, rather it means that the principle of the development does not need to be agreed in later consenting processes, providing more certainty for communities, business and investors.

- 5.10 Onshore wind farms exceeding 50 megawatts capacity are identified as a national development. NPF4 states:

*"national development [Wind farms over 50MW capacity] supports renewable electricity generation, repowering, and expansion of the electricity grid."*

*A large increase in electricity generation from renewable sources will be essential for Scotland to meet its net zero emissions targets. Certain types of renewable electricity generation will also be required, alongside developments and increases in storage technology and capacity, to provide the vital services, including flexible response, that a zero-carbon network will require. Generation is for consumption domestically as well as for export to the UK and beyond, with new capacity helping to decarbonise heat, transport and industrial energy demand. This has the potential to support jobs and business investment, with wider economic benefits."*

- 5.11 Even for wind farm developments that don't meet these national designation thresholds, the importance placed on rapid electricity generation indicates the government's keen stance on renewable energy infrastructure. This is further outlined by the statement of need and the fundamental part that renewable energy has in meeting net zero targets.

- 5.12 Part 2 of NPF4 introduces a number of national planning policies which apply to all development proposals in Scotland. It sets out that:

*"to achieve a net zero, nature positive Scotland, we must rebalance our planning systems so that climate change and nature recovery are the primary guiding principles for all our plans and all our decisions. That includes emissions reduction and the adaptations we need to make in order to be resilient to the risks created by a warmer climate."*

- 5.13 Policy 2 'Climate Emergency' states that "when considering all development proposals significant weight should be given to the global climate emergency".

- 5.14 Part C of the policy sets out that:

*"development proposals for national, major or EIA development should be accompanied by a whole life assessment of greenhouse gas emissions from the development. In decision making the scale of the contribution of development proposals to emissions in relation to emissions reduction targets should be taken into account."*

- 5.15 Policy 5 (c) allows for the use of peatland, priority peatland and carbon rich soils for a limited number of uses, including renewable energy generation and states planning applications of this nature should be supported.

- 5.16 Policy 4(g) removes the need for consideration of effects of development on wild land if the development is meeting renewable energy targets and states buffer zones around wild land will not be applied in this case.

- 5.17 Policy 11 seeks to encourage, promote and facilitate all forms of renewable energy development onshore and offshore and states that "LDPs should seek to realise their area's full potential for electricity and heat from renewable, low carbon and zero emission sources by identifying a range of opportunities for energy development". The policy outlines a number of considerations for renewable energy development:

- a) *Development proposals will only be supported where they maximise net economic impact, including local and community socio-economic benefits such as employment, associated business and supply chain opportunities.*
- b) *Development proposals that impact on international or national designations will be assessed in relation to Policy 4.*
- c) *In addition, project design and mitigation will demonstrate how the following impacts are addressed:*
  - i. *Impacts on communities and individual dwellings, including, residential amenity, visual impact, noise and shadow flicker;*
  - ii. *Significant landscape and visual impacts, recognising that such impacts are to be expected for some forms of renewable energy. Where impacts are localised and/ or appropriate design mitigation has been applied, they will generally be considered to be acceptable;*
  - iii. *Public access, including impact on long distance walking and cycling routes and scenic routes;*

- iv. *Impacts on aviation and defence interests including seismological recording;*
- v. *Impacts on telecommunications and broadcasting installations, particularly ensuring that transmission links are not compromised;*
- vi. *Impacts on road traffic and on adjacent trunk roads, including during construction;*
- vii. *Impacts on historic environment;*
- viii. *Effects on hydrology, the water environment and flood risk;*
- ix. *Biodiversity including impacts on birds;*
- x. *Impacts on trees, woods and forests;*
- xi. *Proposals for the decommissioning of developments, including ancillary infrastructure, and site restoration;*
- xii. *The quality of site restoration plans including the measures in place to safeguard or guarantee availability of finances to effectively implement those plans; and*
- xiii. *cumulative impacts*

## **South Ayrshire Council Local Development Plan 2**

- 5.18 South Ayrshire Council formally adopted Local Development Plan 2 in August 2022.
- 5.19 **LDP Policy: Sustainable Development** is a strategic policy. It states that SAC will support the principles of sustainable development by making sure that development meets a range of “standards”. The standards include:
- a) Respect, protects and where possible, enhances natural, built and cultural heritage resources
  - b) Protects and safeguards the integrity of designated sites.
  - c) Protects peat resources and carbon rich soils.
  - d) Does not have a negative effect on air or water quality
  - e) Incorporates sustainable urban drainage and avoids increasing (and where possible reduces) risks of, or from all forms of flooding.
  - f) Respects the character of the landscape and the setting of settlements.
  - g) Helps mitigate and adapt to the effects of climate change.
- 5.20 The Policy also states that when considering development proposals, due weight will be given to the consideration of net economic benefit.
- 5.21 **LDP Policy: Wind Energy** is the lead LDP policy for wind farm proposals. The policy expresses support for wind energy development. It provides that proposals for wind farms on sites that are not within Group 1 or Group 2 areas, as described in Scottish Planning Policy Table 1, are likely to be acceptable subject to detailed consideration against a range of criteria the subject-matter of which can be broadly related to the criteria within NPF4, Policy 11 e). The Wind Energy criteria are:
- a) They consider and respect the main landscape features and character through careful site selection, layout and overall design. Potential impacts will be mitigated appropriately to ensure that significant effects on the landscape and the wider area are minimised;



- 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) The extent to which they would have a positive net economic impact, including local and community socio-economic benefits such as employment, business and supply chain opportunities;
  - d) *The extent to which they would contribute to renewable energy generation targets and to the Scottish Government's net-zero target;*
  - e) They would have no other unacceptable detrimental effect upon the amenity of nearby residents, including from noise and shadow flicker;
  - f) Taking into account the criteria in LDP policy natural heritage, they would not have an unacceptably detrimental effect upon natural heritage, including wild land, birds and carbon rich soils;
  - g) Taking into account the criteria in LDP policy: historic environment and LDP policy archaeology, they would not have an unacceptably detrimental effect upon the historic environment;
  - h) They would not adversely affect aviation safety or defence interests, as well as telecommunications and broadcasting installations, ensuring in particular that transmission links are not compromised;
  - i) Their cumulative impact in combinations with other existing and approved wind energy developments, and those for which applications for approval have already been submitted, is acceptable.
- 5.22 The policy states that in applying criteria a) to i) above, the South Ayrshire Landscape Wind Capacity Study 2018 (or any subsequent update thereof) and the South Ayrshire Local Landscape Area Review 2018 will be treated as important material considerations.
- 5.23 LDP Policy: Wind Energy states that in applying its policy criteria, the South Ayrshire Landscape Wind Capacity Study 2018 (SALWCS) is to be treated as an important material consideration. The SALWCS is not part of the Development Plan but is a strategic appraisal of the relative sensitivity of landscapes to generic development typologies.
- 5.24 LDP Policy: Wind Energy states that in applying its policy criteria, the South Ayrshire Local Landscape Designation Review (SALLDR) is to be treated as important material consideration.
- 5.25 The SALLDR identifies the boundaries of each Local Landscape Area (LLA) and provides a Statement of Importance which sets out reasons for designation and describes the special qualities and (briefly) sensitivity to change. The Site is identified as being within the Brown Carrick Hills LLA.
- 5.26 **LDP Policy: Landscape Quality** relates to the maintenance and improvement of the landscape and its distinctive local characteristics. Proposals must conserve features that contribute to local distinctiveness. Guidance contained in the 'statements of importance' and management recommendations of the South Ayrshire Local Landscape Designations Review (2018) will be considered for proposals within or affecting Local Landscape Areas.

- 5.27 **LDP Policy: Air, Noise And Light Pollution** states that SAC will not allow development which would expose people to unacceptable levels of air, noise or light pollution.
- 5.28 **LDP Policy: Water Environment** support the objectives of the Water Framework Directive (2000/60/EC) and states that development will only be allowed if meeting these objectives and showing that:
- a) It will protect, and where possible, improve the water environment;
  - b) It will not pose an unacceptable risk to the quality of controlled waters (including groundwater and surface water); and
  - c) It will not harm the biodiversity of the water environment.
  - d) It seeks to avoid (or remove) instances of construction works and structures in and around the water environment;
  - e) It provides an appropriately sized buffer strip between the development and a water course.

## **Material Considerations**

- 5.18 This section sets out relevant material considerations, namely:

- International Renewable Energy Policy Framework
- Onshore Wind Policy Statement
- Planning Advice Notes
- Scottish Government Web Based Renewable Guidance

- 5.19 These are considered in turn below.

### ***International and National Renewable Energy Policy Framework***

- 5.20 This section identifies the renewable energy policy framework at the international and national level that applies to renewable electricity generation and related climate change action.
- 5.21 The Planning Statement that accompanies this EIAR examines these policy documents in detail and sets out the hierarchy of EU, UK and Scottish Government renewable energy policy.
- 5.22 In terms of the relevant policy framework at the International and European level, the following key documents are of relevance:
- International Agreements and Obligations – The COP21 UN Paris Agreement; and
  - EU Renewable Energy progress Report – October 2020
- 5.23 In terms of UK carbon and renewable energy policy, the following documents are of relevance:
- The UK Renewable Energy Roadmap (2011);
  - The UK Renewable Energy Roadmap Update (2013);

- The UK's Sixth Carbon Budget (June 2021)
- Net Zero: Build Back Greener (2021)
- British Energy Security Strategy (2022)

5.24 The following Scottish government renewable energy policy documents are also of relevance:

- The Electricity Generation Policy Statement (2013);
- Scotland's Energy Strategy (2017);
- Onshore Wind Policy Statement (2020)
- Climate Change Plan (2018);
- Climate Change (Emissions Reduction Targets) (Scotland) 2019
- Climate Change Act (2019) and;
- The Annual Energy Statement (2020);

### **Onshore Wind Policy Statement**

5.25 The Scottish Government published an updated Onshore Wind Policy Statement (OWPS) on 21 December 2022 which replaces the earlier version published in November 2017. The Ministerial Foreword makes it clear that seeking greater security of supply and lower cost of electricity generation are now key drivers alongside the need to deal with the climate emergency. It is stated:

*"that is why we must accelerate our transition towards a net zero society. Scotland already has some of the most ambitious targets in the world to meet net zero but we must go further and faster to protect future generations from the spectre of irreversible climate damage".*

*"Scotland has been a frontrunner in onshore wind and, while other renewable technologies are starting to reach commercial maturity, continued deployment of onshore wind will be key to ensuring our 2030 targets are met".*

5.26 The Foreword highlights that onshore wind has the ability to be deployed quickly, is good value for consumers and is also widely supported by the public and that:

*"This Statement, which is the culmination of an extensive consultative process with industry, our statutory consultees and the public, sets an overall ambition of 20 GW of installed onshore wind capacity in Scotland by 2030".*

5.27 The OWPS is structured on the basis of eight chapters which contain a mix of broad policy guidance and technical information. The points of most relevance to the Proposed Development are set out below.

5.28 The OWPS makes the following statement on page 5 in relation to the current deployment of onshore wind in Scotland:

*"We must now go further and faster than before. We expect the next decade to see a substantial increase in demand for electricity to support net*

*zero delivery across all sectors, including heat, transport and industrial processes".*

5.29 Section 1.3 refers to the new 20 GW ambition and states:

*"It is vital to send a strong signal and set a clear expectation on what we believe onshore wind capacity will contribute in the coming years.*

*In line with this commitment, and reflecting the natural life cycles of existing wind farms, this statements sets out a new ambition for the deployment of onshore wind in Scotland:*

*A minimum installed capacity of 20 GW of onshore wind in Scotland by 2030.*

*This ambition will help support the rapid decarbonisation of our energy system, and the sectors which depend upon it, as well as aligning with a just transition to net zero whilst other technologies reach maturity".*

5.30 This statement is followed by reference to the 'Legislative Context', in particular the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 and the related Net Zero greenhouse gas emissions targets. The OWPS states that "meeting these targets will require decisive and meaningful action across all sectors" and that "onshore wind will play a crucial role in delivering our legally binding climate change targets".

5.31 Section 2.3 refers to a 'Vision for Onshore Wind in Scotland' and states that Scottish Renewables, on behalf of the sector in Scotland, has produced a 'Vision Statement' which the Government considers to "lay the basis of a more detailed sector deal" that will be developed by a newly formed Onshore Wind Strategic Leadership Group (SLG).

5.32 The Vision Statement includes the following statement:

*"Onshore wind remains vital to meeting this increasing demand, providing fast deployment whilst minimising cost to the consumer. This will be achieved by deploying the most productive modern turbines that are taller than older models, by re-powering existing sites where possible and by maximising the use of our exceptional natural wind resources where environmental effects are acceptable".*

5.33 Chapter 3 of the OWPS refers to matters relating to the following environmental topics:

- Shared land use;
- Peat and carbon-rich soils;
- Forestry;
- Biodiversity;
- Landscape and visual amenity; and
- Noise

5.34 Of particular relevance to this appeal is landscape and visual amenity. In this respect the OWPS states at paragraph 3.6.1:

*“Meeting our climate targets will require a rapid transformation across all sectors of our economy and society. This means ensuring the right development happens in the right place. Meeting the ambition of a minimum installed capacity of 20 GW of onshore wind in Scotland by 2030 will require taller and more efficient turbines. This will change the landscape”.*

- 5.35 In addition, paragraph 3.6.2 of the OWPS cross refers to NPF4 and provides that outside of National Parks and National Scenic Areas:

*“the criteria for assessing proposals have been updated, including stronger weight being afforded to the contribution of the development to the climate emergency, as well as community benefits”.*

- 5.36 It is clear then that NPF4 and the OWPS represent a recalibration of how the planning balance should operate when making decisions on wind farm applications.

### **Planning Advice Notes (PANs)**

- 5.37 Table 5.1 identifies and summarises the Planning Advice Notes (PANs) of relevance to the Proposed Development.

**Table 5.1: PANs of relevance to the Proposed Development**

| Guidance                               | Title                                                  | Summary                                                                                                                                                                                                                              |
|----------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PAN 2/2011                             | Planning and Archaeology                               | Provides advice to planning authorities and developers on dealing with archaeological remains. It does so with fresh emphasis which is proportionate to the relative value of the remains and of the development under consideration |
| Scottish Government Web Based Guidance | Web Based Renewables Advice – 'Onshore wind turbines'  | Advises planning authorities and developers with respect to the development of onshore wind turbines.                                                                                                                                |
| PAN 1 /2011                            | Planning and Noise                                     | Sets out the role of the planning system in preventing and limiting the adverse effects of noise                                                                                                                                     |
| PAN 1/2013                             | Environmental Impact Assessment (2013)                 | Explains the role of individual planning authorities and that of the Consultation Bodies in EIA, as well as providing guidance on the ways in which EIA can be integrated into the overall development management process            |
| PAN 60                                 | Planning for Natural Heritage (2000)                   | Gives basic advice in relation to development and natural heritage. It reiterates the Government's Commitment to the protection and enhancement of the natural heritage                                                              |
| PAN 61                                 | Planning and Sustainable Urban Drainage Systems (2001) | Provides good practice and advice for planners and the development industry complementing the Sustainable Urban Drainage Systems                                                                                                     |

| Guidance   | Title                         | Summary                                                                                                                                                                         |
|------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |                               | Design Manual for Scotland and Northern Ireland (2000)                                                                                                                          |
| PAN 75     | Planning for Transport (2005) | Provides advice on the requirement to link transport strategies and development plans and the need to take into account accessibility, location, modal split parking and design |
| PAN 3/2010 | Community Engagement          | Advice to Planning Authorities and developers on how communities should be properly engaged in the planning process                                                             |

### **Scottish Government Web Based Renewables Guidance**

- 5.38 The Scottish Government has produced web-based renewables guidance. The planning advice comprises a number of individual guidance notes including 'Onshore Wind Turbines'. The Scottish Government published the most recent update of this on 28 May 2014.
- 5.39 The relevant aspects of the guidance are provided under the following headings and have been taken into account during design development.
- Landscape impact
  - Impacts on wildlife and habitat, ecosystems and biodiversity
  - Assessing impact on wildlife and habitats
  - Buffer zones
  - Impact on communities
  - Separation distances
  - Aviation matters
  - Road traffic impacts
  - Cumulative impacts; and
  - Decommissioning.
- 5.40 The guidance advises that planning authorities should ensure, either via conditions or legal agreements, that site restoration takes place on expiry of the consent or the expiry of the specified period.

## 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 of 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.
- 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 below illustrates how the criteria will be used to assign a level of significance to potential impacts.

|             |           | 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    |                       |                   |                   |

**Table 6.1: Significance matrix**

- 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.

| 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 district 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. |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|

**Table 6.2: Descriptors of significance**

## EIAR Structure

6.6 The EIAR structure 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 main alternatives studies and an indication of the main reasons for choosing the preferred option;
- An outline of the planning and renewable energy policy context that is relevant to the Proposed Development;
- Individual environmental assessment topic chapters, including:
  - Landscape and visual effects
  - Archaeology and cultural heritage
  - Ornithology
  - Ecology
  - Noise
  - Traffic and transport
  - Hydrology, hydrogeology and geology
  - Forestry
  - Infrastructure
  - Socio-economics
- A description of the mitigation measures required to prevent, reduce and, where possible, offset any significant adverse effects on the environment. Enhancement measures where possible will also be included.
- An indication of any difficulties or uncertainties encountered in compiling the EIAR.

6.7 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.

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

## **Mitigation**

6.9 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.

6.10 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.

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

## 7 SCOPE OF THE EIA

### Introduction

- 7.1 Schedule 3 of the EIA Regulations outlines the selection criteria for determining whether 'Schedule 2 Development' is 'EIA Development'. These criteria are expanded upon in Schedule 4, which sets out in Part II certain information that must be included in an EIAR and in Part I information that may reasonably be required to assess the effect of the proposed development. Furthermore, the 1997 Directive on EIA identified in Article 3 that:

*"The environmental impact assessment shall identify, describe and assess in an appropriate manner...the direct and indirect effects of a project on the following factors:*

- *Human beings, fauna and flora;*
- *Soil, water, air, climate and the landscape;*
- *Material assets and the cultural heritage;*
- *The interaction between the factors mentioned in the first, second and third indents."*

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

### Human Beings

#### **i) Society and Economy**

- 7.3 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.

#### Proposed Scope of Assessment

- 7.4 The EIA 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).
- 7.5 It is unlikely that the Proposed Development would give rise to any significant effects on land management practices.

- 7.6 It is considered that the potential effects upon tourism would be minor and therefore will be scoped out of the EIA.

#### Methodology

- 7.7 A baseline study will be undertaken to identify the socio-economic characteristics of the local area along with any recreational receptors.
- 7.8 Effects on use of recreational assets and other leisure and tourism attractions in the surrounding area due to visual impact, traffic, noise and shadow flicker will be dealt with in the technical assessments discussed in the relevant sections below.

### **ii) Transportation**

- 7.9 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

- 7.10 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. If available, traffic count data will be sourced from the local highways authority.

#### Potential Effects

- 7.11 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;
  - The effects of construction traffic on the public highways and adjacent infrastructure ('wear and tear').

#### Proposed Scope of Assessment

- 7.12 The scope of the assessment would be agreed in advance with the local highways authority. It is currently 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.

7.13 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.

#### Methodology

7.14 The traffic and transport section of the EIAR will consider baseline conditions, the transport and traffic impacts and proposed mitigation measures as appropriate. 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.
- Institute of Highways and Transportation (1994) Guidelines for Traffic Impact Assessment.

7.15 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.

7.16 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

7.17 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.
- No parking of construction plant, equipment and vehicles off-site on public highways.

- Establishing a construction traffic management plan for the development which could be secured via a suitably worded planning condition.

### **iii) Noise and Vibration**

#### Baseline

- 7.18 The Site is not within the near vicinity of any consented, operational or proposed wind farms, with the closest being the consented Kirk Hill Wind Farm located approximately 8km to the south of the Site. As such, the existing noise environment at the Site is likely relatively undisturbed with reference to other nearby wind farms. . Other noise in the area is likely to be from traffic noise, animals and birds and from wind around trees and foliage, depending on wind speed.

#### Potential Effects

- 7.19 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.
- 7.20 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.
- 7.21 For on-site construction noise and operational noise at different wind speeds, the levels received at residential properties will depend on wind direction.
- 7.22 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

- 7.23 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.
- 7.24 No assessment of operational traffic noise is anticipated given the low number of journeys to and on the Site for routine maintenance.
- 7.25 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.

- 7.26 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 noise limits and would be deemed acceptable.

#### Methodology

- 7.27 ETSU-R-97 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.
- 7.28 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.
- 7.29 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.
- 7.30 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

- 7.31 For operational noise, the proposed turbine layout will be designed to comply with the noise limits established in accordance with ETSU-R-97.
- 7.32 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.

- 7.33 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.

#### ***iv) Radio-communication and Television***

- 7.34 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

- 7.35 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

- 7.36 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 effect communication equipment in close proximity to the turbine.

##### Proposed Scope of Assessment

- 7.37 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.
- 7.38 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

- 7.39 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.

## **v) Aviation**

- 7.40 This section of the EIAR will consider the effects of the Proposed Development upon civilian and military radar.

### Baseline

- 7.41 There are a number of aviation interests in the area which could potentially be affected by the Proposed Development. In particular, Glasgow Prestwick Airport (GPA) located approximately 14km north-east, and NATS En Route Ltd (NERL), who operate a network of long range Air Traffic Control (ATC) radars throughout the United Kingdom. Both will be consulted by the Applicant early in the EIA process.

### Potential Effects

- 7.42 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

- 7.43 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 locations of the turbines have been finalised with appropriate interested parties.
- 7.44 The EIAR will present the findings of these consultations and all responses received, as well as any predicted impacts on aviation and mitigation required.

## **vi) Shadow Flicker**

### Potential Effects

- 7.45 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

- 7.46 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

- 7.47 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.

## **Flora and Fauna**

- 7.48 This section of the EIAR will consider the likely ecological and ornithological impacts associated 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.

### Baseline

- 7.49 The Site principally consists of open moorland with a section of plantation woodland, which is generally of low ecological value, and supports an ornithological and ecological assemblage typical to this area.
- 7.50 No statutory sites of international or national importance for ecological interests are present within the Site and only one is located within 5km, namely Maidens and Doonfoot SSSI, 1.7km to the west of the Site. Statutorily protected sites for ornithological interests within 25km of the Site are detailed in Table 7.1 below.

| Site Name and Designation | Designation Interest                                                                                                                                                                                                                                                                         | Distance to Site (approximately) |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Bogton Loch SSSI          | Breeding bird assemblage, which includes: <ul style="list-style-type: none"> <li>• song thrush;</li> <li>• grasshopper warbler;</li> <li>• spotted flycatcher;</li> <li>• willow tit;</li> <li>• reed bunting; and</li> <li>• sporadically, a small colony of black-headed gulls.</li> </ul> | 18km                             |
| Arran Moors SSSI          | Hen harrier, breeding;<br>Breeding bird assemblage, which includes: <ul style="list-style-type: none"> <li>• red-throated diver;</li> </ul>                                                                                                                                                  | 23km                             |

|                 |                                                                                                                         |      |
|-----------------|-------------------------------------------------------------------------------------------------------------------------|------|
|                 | <ul style="list-style-type: none"> <li>• golden eagle;</li> <li>• peregrine; and</li> <li>• short-eared owl.</li> </ul> |      |
| Arran Moors SPA | Hen harrier, breeding.                                                                                                  | 23km |

**Table 7.1 Summary of statutorily protected sites designated for ornithological features within 25km of the Site**

Potential Effects

7.51 The Proposed Development has the potential to affect the ecology of the area at the construction, operational and decommissioning stages. Potential effects during construction may arise from:

- Presence of people;
- Noise;
- Vegetation, top soil and sub-soil removal, resulting in habitat loss and habitat fragmentation;
- Ground and excavation works;
- Construction of turbine foundations and access routes;
- Vehicular traffic;
- Creation of temporary construction compounds and storage areas;
- Routing of services and utilities (e.g. underground electrical lines and drainage); and
- Development of watercourse crossings.

7.52 During the operational phase, effects may arise from:

- Vehicular traffic;
- Presence of people;
- Noise;
- Drainage; and
- Wind turbine activity.

7.53 During de-commissioning, effects are expected to be similar to those experienced during construction.

### Proposed Scope of Assessment

- 7.54 The ecological assessment will consider the potential effects of the Proposed Development on designated and non-designated ecological sites in the wider area, as well as flora and fauna interest on the Site and within the surrounding area.
- 7.55 The ornithological assessment will determine the potential for sensitive, notable or rare species to be affected by the Proposed Development. Where potential adverse, negative effects are identified suitable mitigation or compensation will be identified to reduce effects to an acceptable (non-significant) level.

### Methodology

- 7.56 The EIA will be based on the following surveys:
- One year of Vantage Point surveys;
  - Breeding Raptor and Owl surveys;
  - Species-specific breeding surveys;
  - Moorland breeding bird surveys;
  - Bats: transect and static survey;
  - Protected species surveys;
  - Extended Phase 1 habitat survey;
  - NVC and GWDTE; and
  - River habitat walkover.

### Design and Mitigation

- 7.57 With appropriate site design, habitat loss can be restricted to areas of low ecological value such as ecologically sterile areas of commercial forestry, and by limiting the loss of trees and wetland removal.
- 7.58 Wherever possible, turbines will be located away from major wildfowl flight lines and areas of high raptor activity.
- 7.59 Consideration will be given to habitat enhancement/creation works. Such works should be away from the turbines to avoid increasing the risk of bird strike.

## **Soil, Geology and Water**

- 7.60 This section of the EIAR will assess the ground conditions and hydrogeology of the Site and its surrounds.

### Baseline

- 7.61 The Site is located on the boundary of the River Doon and South Ayrshire Coastal catchments, 2km to the east of the Firth of Clyde. There are a number of minor watercourses present on the Site, including the Sauchrie Burn and the Culroy Burn which flow east before joining the River Doon. Other minor watercourses in the west of the Site drain towards the Firth of Clyde.
- 7.62 The British Geological Survey (BGS) Geoindex shows the bedrock underlying the Site to be primarily comprised of Carrick Volcanic Formation - Basalt And Basaltic Andesite in the north of the Site and Swanshaw Sandstone Formation – Sandstone in a small section in the south. Areas of potential peat are mapped to locations in the centre and north of the Site.

### Potential Effects

- 7.63 Wind farm construction, operation and decommissioning involve activities that may affect soil, geological or water 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.

### Proposed Scope of Assessment

- 7.64 The principal areas of consideration in the EIA will be:
- Water quality and pollution prevention;
  - Site drainage (tracks, turbine foundations and hardstanding areas);
  - Ground water (in particular in relation to turbine foundation construction);
  - Peat risk and peat waste management;
  - Watercourse crossings and the impact of other engineering activities near water;
  - Potential for land contamination;
  - Private water supplies; and
  - Mineral stability.

### Methodology

- 7.65 In order to establish the existing hydrology, hydrogeology and geology conditions at the Site an initial desktop information gathering exercise will be carried out followed by site surveys.
- 7.66 A flood risk assessment is not considered likely to be required for this Proposed Development and so will not be included in the EIA.

### Design and Mitigation

- 7.67 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. Any areas of deep peat will be avoided where possible.

## **Air and Climate**

### Potential Effects

- 7.68 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.
- 7.69 No adverse air quality impacts are anticipated from the operation of the Proposed Development.

### Proposed Scope of Assessment

- 7.70 The EIA will consider the current electricity generation mix and assess the level of savings that could be made.
- 7.71 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.
- 7.72 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.

## **Landscape and Visual Amenities**

- 7.73 It is acknowledged from the outset that, in common with almost all commercial wind energy developments, some landscape and visual effects would occur as a result of the proposals, including some significant effects.
- 7.74 A key principle of the European Landscape Convention is that all landscapes matter and should be managed appropriately. It is also acknowledged that landscapes provide the surroundings for people’s daily lives and often contribute positively to the quality of life and economic performance of an area.
- 7.75 It is therefore proposed that a Landscape and Visual Impact Assessment (LVIA) is undertaken as part of the EIA and an LVIA chapter included within the EIA Report. The LVIA will be undertaken by Chartered Landscape Architects, who are experienced in the assessment of large scale, onshore wind energy projects.

7.76 It is proposed that the LVIA will consider the potential effects of the Proposed Development upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

## **Baseline**

7.77 The site is located approximately 4km south west of Ayr and approximately 9km to the north of Maybole, within South Ayrshire. The Proposed Development is situated within an upland landscape to the south of Brown Carrick Hill, partly covered by plantation forestry.

### *Landscape Character*

7.78 NatureScot<sup>1</sup> published an updated national set of Landscape Character Types (LCTs) in early 2019. This 2019 national LCT map and associated LCT Descriptions now supersede the earlier 1990s SNH landscape character descriptions and mapping.

7.79 The site lies within LCT 62 'Coastal Headlands'.

7.80 The key characteristics of LCT 62 'Coastal Headlands' are defined by NatureScot as follows:

- Distinctive headland, consisting of hills with bluffy almost craggy summits, flanked seawards by raised beaches;
- Varied geology formed by igneous rocks and a combination of sandstones, carboniferous rocks and lavas;
- Sheltered slopes consist of pastures enclosed by hedgerows, with rough grazing on exposed slopes and gorse and outgrown field boundary trees on summits;
- Semi-natural woodland is found on some of the more sheltered slopes with some areas of coniferous woodland also present;
- Settlement quite sparse and limited to small settlements, single houses and farmsteads on lower slopes;
- Sites for communications infrastructure, including a number of masts;
- Exposed, open and highly visible landscape, with panoramic views over the coastal edge and Firth of Clyde.

7.81 In introducing the updated National Landscape Character Assessment, NatureScot set out that where there are 'topic specific landscape capacity or sensitivity studies, they would take precedence for informing that development type'.

7.82 The South Ayrshire Landscape Wind Capacity Study 2018 updates the earlier 2013 landscape wind capacity study and considers the landscape and visual sensitivity of the identified landscape character types in South Ayrshire to wind energy development, including with reference to larger scale wind energy developments. Therefore, it is

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<sup>1</sup> Scottish Natural Heritage (SNH) rebranded in August 2020 as NatureScot. Where relevant reference is still made to SNH within this chapter in respect of guidance which remains valid and is yet to be republished etc.

proposed to focus the assessment of effects on landscape character on this study and not the national level assessment.

- 7.83 The site lies within LCT 4b 'Brown Carrick Hills'. The Summary of Sensitivity for the LCT set out in the Capacity Study states as follows:

***"The Coastal Headlands – Carrick Hills (4b) character type is a cluster of rugged, prominent landmark hill summits which are easily recognisable and widely visible over Ayrshire and the outer Firth of Clyde. It provides the immediate backdrop to a number of smaller scale and lower lying character types, including the Raised Beach Coast with Flat Fields and Headlands (1c), the Coastal Valley with Policies (5) and the River Doon Lowland River Valley (9). It also provides the backdrop to Ayr and contributes to the setting of Culzean castle. The hills are perceived to be higher than they are, and the prominence of the three masts near the summit, bear this out. The landform is rugged and can be complex, with varied interlocking terrain, shallow valleys and steep slopes. The vegetation pattern ranges from open wet moor and occasional conifer woodland on the upper slopes to semi-natural broadleaved woodland, enclosed fields, riparian woodland and, to the east, policies associated with larger houses overlooking the Doon valley. Only the lower hill slopes and more sheltered inland valleys are settled, with small settlements as well as farms and single houses connected by a network of narrow roads."***

- 7.84 The LVIA will include an assessment of the sensitivity of the character of the LCTs within the Study Area, before going on to provide an assessment of the potential for the proposed development to result in significant effects on the character of each.

#### *Landscape Designations*

- 7.85 The Proposed Development is not located within a nationally or locally designated landscape. The nearest National Scenic Area (NSA) is 'North Arran' which lies just over 35km to the north-west of the site, across the Firth of Clyde.
- 7.86 The site lies within the locally designated Brown Carrick Hills Local Landscape Area.
- 7.87 The nearest Garden and Designed Landscape is Rozelle, located approximately 6.5 km to the north-east, within the southern part of Ayr. Skeldon House lies around 9km away to the east, beyond Dalrymple.
- 7.88 The site lies outwith Wild Land, with the nearest area, Area 1 Merrick, lying around 24 km to the south-east.

#### **Potential Effects**

- 7.89 The Proposed Development would have the potential to bring about effects on landscape features, landscape character, and visual amenity.
- 7.90 This includes the wind turbines and their associated visible aviation lighting, along with the ancillary elements such as crane hardstandings, access tracks, underground cables, electricity substation and anemometer.



7.91 These elements will be considered throughout the LVIA where necessary.

### ***Proposed Scope of Assessment***

7.92 It is proposed that the main objectives of the LVIA will be as follows:

- to identify, evaluate and describe the current landscape character of the site and its surroundings, and also any notable individual or groups of landscape features within the site;
- to determine the sensitivity of the landscape to the type of development proposed;
- to identify potential visual receptors (i.e. people that would be able to see the Proposed Development) and evaluate their sensitivity to the type of changes proposed;
- to identify and describe any impacts of the Proposed Development in so far as they affect the landscape and/or views of it and evaluate the magnitude of change due to these impacts;
- to identify and describe any mitigation measures (including mitigation which is inherent in the design and layout of the Proposed Development) that have been adopted to avoid, reduce and compensate for landscape and visual effects;
- to identify and assess any cumulative landscape and visual effects;
- to evaluate the level of residual landscape and visual effects; and
- to make a professional judgement about which effects, if any, are significant.

### *Distinction between Landscape and Visual Effects*

7.93 In accordance with the published guidance, landscape and visual effects shall be assessed separately, although the procedure for assessing each of these is closely linked. A clear distinction has been drawn between landscape and visual effects as described below:

- Landscape effects relate to the effects of the Proposed Development on the physical and perceptual characteristics of the landscape and its resulting character and quality; and
- Visual effects relate to the effects on specific views experienced by visual receptors and on visual amenity more generally.

### *Types of Effects Considered*

7.94 It is proposed that the LVIA will consider the potential effects of the Proposed Development upon:

- individual landscape features and elements;
- landscape character; and
- visual amenity and the people who view the landscape.

7.95 The LVIA will considers the effects at three different stages in the lifetime of the Proposed Development:

- during construction of the Proposed Development;
- during the operational lifetime of the Proposed Development; and
- during decommissioning of the Proposed Development.

7.96 Effects during the first and third of these phases are considered to be temporary and would have a short duration. Effects associated with the operational phase of the Proposed Development are considered to be long term, reversible effects.

7.97 Following the judgement of the sensitivity of the landscape or visual receptor, the LVIA will provide a judgement as to the magnitude of change and the level of the effect experienced by each receptor, along with a statement to clarify whether the effect resulting from the Proposed Development is significant or not.

#### *Study Area*

7.98 In order to assist with defining the Study Area, a digital Zone of Theoretical Visibility (ZTV) model was created as a starting point to illustrate the geographical area within which views of development on the Site are theoretically possible.

7.99 This was based on a 'bare-earth' scenario, whereby the screening effect of areas of existing vegetation or built features in the landscape are not taken into account. The ZTV was modelled to blade tip height using the currently proposed maximum turbine blade tip height of 200 m and is presented at Figure 7.1.

7.100 Having reviewed the ZTV, it is proposed that the LVIA will consider an initial 35 km radius Study Area. Detailed assessment will then be provided for a 20 km radius Study Area, which it is considered represents a proportionate extent of the Study Area and the limit within which any potential significant effects might occur.

7.101 For the cumulative assessment, consideration was initially given to a 60 km radius from the site, as recommended by NatureScot best practice guidance. Following this review, it is proposed that a 20 km detailed Study Area be adopted to consider cumulative effects, which is considered represents a proportionate extent of the Study Area and the limit within which any potential significant cumulative effects might occur.

#### *Visual Receptors*

7.102 A detailed consideration of the potential for effects to the visual amenity of receptors in the landscape surrounding the site will be set out in the LVIA. This visual assessment will be informed by a selection of representative assessment viewpoints, which are listed below, each of which will be illustrated with visualisations prepared in line with NatureScot best practice guidance.

7.103 Typically, a detailed consideration with regard to the visual amenity of the nearest residential properties to the site is given within in the LVIA (excluding those with a financial involvement in the project from detailed assessment). Therefore, for any residential properties located within 2 km of the Proposed Development, a separate standalone Residential Visual Amenity Study (RVAS) will be prepared as part of the LVIA.

- 7.104 In addition, the LVIA will consider the potential effects of the Proposed Development on different receptor groups, comprising settlements, footpath users, recognised tourist routes, long distance walking routes, cycle routes and centres for tourism.

*Proposed LVIA Viewpoint Locations*

- 7.105 It is proposed that the 12 locations set out in Table 7.2 are included as viewpoints in the LVIA. The viewpoint locations which are illustrated on Figure 7.1 represent visual receptors and character types at a range of distances and directions from the site.

| Viewpoint Number | Location                                              | OS Grid Reference |
|------------------|-------------------------------------------------------|-------------------|
| VP1              | Minor Road within Brown Carrick Hills                 | 229978, 616288    |
| VP2              | Minor Road south of the site, near Hill View Cottage  | 229115, 613589    |
| VP3              | Ayrshire Coastal Path – Longhill Point car park, Ayr  | 231719, 619334    |
| VP4              | Dunure – Kennedy Recreation Park, near Castle remains | 225238, 615789    |
| VP5              | Maybole – War Memorial                                | 229569, 609419    |
| VP6              | Minor road, near Dalrymple                            | 236110, 614073    |
| VP7              | Ayrshire Coastal Path - Troon                         | 231056, 630972    |
| VP8              | Mochrum                                               | 226497, 610039    |
| VP9              | Killdoon Hill Monument                                | 229899, 607380    |
| VP10             | Kirk Hill                                             | 226635, 604318    |
| VP11             | Kildoach Hill                                         | 239680, 604044    |
| VP12             | Glenalla Fell                                         | 235394, 601149    |

**Table 7.2 Proposed Viewpoint Locations**

- 7.106 The proposed viewpoint locations are located at a range of distances and directions from the Proposed Development, are at varying elevations and cover a variety of different character areas and types. Some of the viewpoints are intended to be representative of the visual experience in a general location whereas other viewpoints illustrate the view from a specific or important vantage point.
- 7.107 Each of the representative viewpoints will be visited to evaluate the sensitivity of views. In addition, the Study Area will also be extensively visited to consider visibility of the Proposed Development as receptors move through the landscape.
- 7.108 The viewpoints will be used as the basis for determining the effects on visual receptors within the Study Area. The sensitivity of different receptor groups will be set out in the LVIA methodology.
- 7.109 The level of effect experienced by different visual receptor groups will be determined by considering in tandem the sensitivity and view with the magnitude of impact.

## Visualisations

- 7.110 For each of the above viewpoints, visualisations will be prepared in line with the Visual Representation of Wind farms – Version 2.2 (SNH, February 2017)<sup>2</sup>.

## Methodology

### Guidance and Legislation

- 7.111 The LVIA shall be undertaken in accordance with the principles of best practice, as outlined in published guidance documents, notably the third edition of the Guidelines for Landscape and Visual Impact Assessment (GLVIA3), (Landscape Institute and the Institute for Environmental Management and Assessment, 2013)<sup>3</sup>.

- 7.112 The methodology and assessment criteria proposed for the assessment has been developed in accordance with the principles established in this best practice document. It should be acknowledged that GLVIA3 establishes guidelines, not a specific methodology. The preface to GLVIA3 states:

*"This edition concentrates on principles and processes. It does not provide a detailed or formulaic 'recipe' that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand."*

- 7.113 The approach has therefore been developed specifically for this assessment to ensure that the methodology is fit for purpose.

- 7.114 As part of the development of the proposed methodology, consideration has also been given to the following documents:

- General pre-application and scoping advice for onshore wind farms. Guidance. NatureScot (September 2020)<sup>4</sup>;
- Guidelines for Landscape Character Assessment, Countryside Agency and SNH (2002)<sup>5</sup>;

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<sup>2</sup> Scottish Natural Heritage (2017). Visual Representation of Wind farms. Guidance Version 2.2 [Online]

Available at: <https://www.nature.scot/visual-representation-wind-farms-guidance>

[Accessed 15/12/20]

<sup>3</sup> Landscape Institute for Environmental Management and Assessment (2013). Guidelines for Landscape and Visual Impact Assessment. Third Edition.

<sup>4</sup> NatureScot (2020). General pre-application and scoping advice to developers of onshore wind farms [Online]

Available at: <https://www.nature.scot/general-pre-application-and-scoping-advice-onshore-wind-farms>

[Accessed 15/12/20]

<sup>5</sup> Scottish Natural Heritage and The Countryside Agency (2002). Landscape Character Assessment. Guidance for England and Scotland [Online]

Available at:

<https://www.nature.scot/sites/default/files/2018-02/Publication%202002%20-%20Landscape%20Character%20Assessment%20guidance%20for%20England%20and%20Scotland.pdf>

[Accessed 15/12/20]

- Assessing the Cumulative Impact of Onshore Wind Energy Developments (SNH, March 2012)<sup>6</sup>;
- Siting and Design of Wind farms in the Landscape, Version 3a (SNH, August 2017)<sup>7</sup>;
- Visual Representation of Wind farms – Version 2.2 (SNH, February 2017)<sup>8</sup>;
- Landscape Institute (LI) Technical Guidance Note 06/19 Visual representation of development proposals (Landscape Institute, September 2017)<sup>9</sup>;
- LI Technical Guidance Note 02/19 Residential Visual Amenity Assessment (RVAA), (Landscape Institute, March 2019)<sup>10</sup>; and

7.115 The LVIA will include an assessment of the sensitivity of the character of the LCTs within the Study Area, before going on to provide an assessment of the potential for the proposed development to result in significant effects on the character of each.

7.116 Full details of the methodology will be provided within an appendix to the LVIA chapter of the EIA Report.

#### *Assessment of Turbine Lighting*

7.117 The Proposed Development will incorporate turbines greater than 150 m, which under Civil Aviation Authority (CAA) Regulations<sup>11</sup> will require to be lit with visible aviation lighting. A 2000 candela steady state red aviation light will be required on the nacelle and three 32 candela steady state red aviation lights on the towers indicating half the nacelle height on all turbines greater than 150 m.

7.118 It is recognised that in some circumstances, it may be possible for turbine lighting to result in a significant effect on the character of the surrounding landscape. For example, if the proposed wind energy development is located within or in close proximity to a designated dark sky area, or is remote from existing sources of visible lighting, such as residential areas, commercial or industrial sites, or major roads.

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<sup>6</sup> Scottish Natural Heritage (2012). Assessing the Cumulative Impact of Onshore Wind Energy Developments [Online]  
Available at: <https://www.nature.scot/guidance-assessing-cumulative-impact-onshore-wind-energy-developments>  
(Accessed 15/12/20)

<sup>7</sup> Scottish Natural Heritage (2017). Siting and Design of Wind farms in the Landscape, Version 3a [Online]  
Available at: <https://www.nature.scot/siting-and-designing-wind-farms-landscape-version-3a>  
(Accessed 15/12/20)

<sup>8</sup> Scottish Natural Heritage (2017). Visual Representation of Wind farms. Guidance Version 2.2 [Online]  
Available at: <https://www.nature.scot/visual-representation-wind-farms-guidance>  
(Accessed 15/12/20)

<sup>9</sup> Landscape Institute (2019). Visual Representation of Development Proposals. Technical Guidance Note 06/19 [Online]  
Available at: <https://www.landscapeinstitute.org/visualisation/>  
(Accessed 15/12/20)

<sup>10</sup> Landscape Institute (2019). Residential Visual Amenity Assessment (RVAA). Technical Guidance Note 02/19 [Online]  
Available at: <https://www.landscapeinstitute.org/technical-resource/rvaa/>  
(Accessed 15/12/20)

<sup>11</sup> Civil Aviation Authority (2017). Lighting of Onshore Wind Turbine Generators in the United Kingdom with a maximum blade tip height at or in excess of 150m Above Ground Level. [Online]  
Available at: [http://publicapps.caa.co.uk/docs/33/DAP01062017\\_LightingWindTurbinesOnshoreAbove150mAGL.pdf](http://publicapps.caa.co.uk/docs/33/DAP01062017_LightingWindTurbinesOnshoreAbove150mAGL.pdf)  
(Accessed 15/12/20)

- 7.119 For wind energy developments which are not located in such areas, it is considered that there would be no potential for significant effects on landscape character to arise from visible turbine lighting of the type proposed. This is because in these areas the character of the landscape during low natural light levels is already in part characterised by the presence of artificial lighting. Therefore, the addition of visible turbine lighting would not have the potential to bring about a fundamental change to the characteristics of the landscape.
- 7.120 The proposed wind farm lies away from recognised dark sky areas, with the Galloway International Dark Sky Park situated over 20 km to the south-east of the Proposed Development. As such effects on it are proposed to be scoped out of the assessment.
- 7.121 The surrounding landscape context around the Proposed Development contains some existing sources of artificial light, particularly within surrounding settlements, industrial developments and along highways. Therefore, the assessment of turbine lighting will focus solely on the additional visual effects introduced by the lights.
- 7.122 In accordance with the recently published "General pre-application and scoping advice for onshore wind farms" (NatureScot September 2020)<sup>12</sup>, the LVIA will assess the additional visual effects of the aviation lighting in the main body of the LVIA chapter. The additional change introduced by the aviation lighting will form a component of the magnitude of change.
- 7.123 This consideration will be informed by a ZTV of the lit turbines and night-time visualisations from a selection of viewpoints, illustrating the proposed lighting effects. In line with NatureScot Visualisation Guidance, the viewpoints selected represent locations from where people are most likely to experience the wind farm at night.
- 7.124 It is proposed that the following night-time visualisations will be produced:
- a) VP2 – Minor Road south of the site, near Hill View Cottage;
  - b) VP3 – Ayrshire Coastal Path – Longhill Point car park, Ayr; and
  - c) VP5 – Maybole – War Memorial.
- 7.125 The viewpoints will be used as a starting point to inform consideration of the potential visual effects on key visual receptors in settlements, and users of the local roads and rights of way network.
- 7.126 Photographic examples of existing aviation lighting in similar light conditions will be presented in a separate appendix as a 'control mechanism'.

### *Cumulative Effects*

- 7.127 The LVIA will also consider the potential for any cumulative effects to arise.

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<sup>12</sup> NatureScot (2020). General pre-application and scoping advice to developers of onshore wind farms [Online]

Available at: <https://www.nature.scot/general-pre-application-and-scoping-advice-onshore-wind-farms>

[Accessed 15/12/20]

- 7.128 It is acknowledged that current best practice guidance for cumulative impact assessment (Assessing the Cumulative Impact of Onshore Wind Energy Developments, (SNH, 2012))<sup>13</sup> still refers to a consideration of proposals which are 'awaiting determination within the planning process with design information in the public domain' and states that 'The decision as to which proposals in the planning / consenting system should be included in an assessment is the responsibility of the determining authority.'
- 7.129 As such, it is proposed in this LVIA to consider cumulative effects caused by the development of the site in conjunction with other sites which are either operational, under construction, consented or the subject of a full planning application. The SNH best practice guidelines identify two principal types of cumulative visual impact:
- Combined visibility – where the observer is able to see two or more developments from one viewpoint; and
  - Sequential visibility – where two or more sites are not visible at one location but would be seen as the observer moves along a linear route, for example, a road or public right of way.
- 7.130 The guidelines state that 'combined visibility' may either be 'in combination' (where two or more sites are visible from a fixed viewpoint in the same arc of view) or 'in succession' (where two or more sites are visible from a fixed viewpoint, but the observer is required to turn to see the different sites). Each of the above types of cumulative effect will be considered in the LVIA.
- 7.131 The assessment will also consider the potential cumulative effects of wind turbine aviation lighting, with reference to other wind farms that are either operational, under construction, consented or the subject of a full planning application.

## ***Design and Mitigation***

- 7.132 As discussed in best practice guidance for EIA, mitigation measures may include:
- avoidance of effects;
  - reduction in magnitude of effects; and
  - compensation for effects (which may include enhancements to offset any adverse effects).
- 7.133 The primary mitigation adopted in relation to landscape and visual matters is likely to be embedded within the design of the Proposed Development and will comprise the consideration given to avoiding and minimising landscape and visual effects during the evolution of the Proposed Development layout. This will be set out within the Design Iteration chapter of the EIA Report, which will also address other forms of embedded mitigation such as mitigation of visible turbine lighting.

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<sup>13</sup> Scottish Natural Heritage (2012). Assessing the Cumulative Impact of Onshore Wind Energy Developments [Online]

Available at: <https://www.nature.scot/guidance-assessing-cumulative-impact-onshore-wind-energy-developments>

(Accessed 15/12/20)

## Cultural Heritage

- 7.134 This section of the EIAR will assess the likely direct and indirect impacts on both designated and non-designated heritage assets within the Site boundary and within the surrounding area. The chapter will assess the significance and setting of these assets and assess the significance of any known or unknown archaeological deposits within the Site boundary.

### Baseline

- 7.135 There are no designated heritage assets within the Site boundary. Various designated heritage assets are however located within 5km of the Site.

### Potential Effects

- 7.136 Direct impacts would involve physical alteration or destruction of heritage assets as a result of the construction, operation or decommissioning of the wind farm. Such direct impacts could result from the construction of turbine and crane bases, new or upgraded access tracks, substations, transformers, cables etc.
- 7.137 Indirect effects on the setting of heritage assets are likely due to the size of the proposed turbines and their potential to detract from key views towards an asset or an experience at the asset when standing within its setting.

### Proposed Scope of Assessment

- 7.138 The proposed scope of the assessment is twofold, to understand:
- Direct effects – The physical effect on all heritage assets, including buried archaeological remains and other historic structures, within the footprint of the Proposed Development including associated services, construction compound, electrical cable connections and on/off site access routes; and
  - Indirect effects – The effect on the setting of the designated heritage assets within the ZTV to a distance of 10km from the proposed turbines.
- 7.139 The EIA will assess the potential direct impacts on identified archaeological sites, as well as the potential indirect impacts on the settings of designated and non-designated heritage assets in association with the Landscape and Visual Impact Assessment.

### Methodology

- 7.140 An extended desk based assessment of available information will be conducted to establish the baseline conditions to enable assessment of both direct and indirect effects within the Site and a study area around it. The principal sources of information will be the Sites and Monuments Records, supplemented by relevant published documentary and cartographic material as appropriate. The proposed study area will be as follows:



- For buried archaeological sites that are recorded on the Sites and Monuments Record but are not otherwise designated, the study area is a 1km buffer zone around the proposed wind turbine locations.
- For designated historic environment resources that fall within the ZTV, the study area is a 10km buffer zone around the proposed wind turbine locations.

#### Design and Mitigation

- 7.141 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 non-designated heritage assets cannot be avoided, mitigation measures such as archaeological excavation and recording/watching brief will be proposed.

## 8 SUMMARY

### Context

- 8.1 Energiekontor UK Ltd is evaluating the potential of land west of Sauchrie ("the Site") for the development of a wind farm of up to 9 wind turbines, including associated development such as crane pads, access tracks, a substation and temporary construction compound ("the Proposed Development").
- 8.2 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 a future 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 if necessary.
- 8.3 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

- 8.4 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?