



Ourack Wind Farm

Environmental Impact Assessment Report Non-Technical Summary

On behalf of **Ourack Wind Farm LLP**



Project Ref: 46685 | Rev: Final V2 | Date: October 2022

Registered Office: Buckingham Court Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU
Office Address: 5th Floor, 9 George Square Glasgow, United Kingdom G2 1DY
T: +44 141 352 2360 E: info.glasgow@stantec.com

Document Control Sheet

Project Name: Ourack Wind Farm

Project Ref: 46685

Report Title: Environmental Impact Assessment Report - Non-Technical Summary

Doc Ref: 46685/EIA/002/i1

Date: October 2022

	Name	Position	Signature	Date
Prepared by:	William Shayshutt	Graduate Environmental Planner	WS	September 22
Reviewed by:	Robert Chamberlain	Senior Environmental Planner	RC	September 22
Approved by:	Steve Callan	Associate Planner	SC	October 22
For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
V1	September 22	Draft V1	WS	-	-
V2	October 22	Final	WS	RC	SC

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

Contents

1	Introduction.....	1
1.1	Overview.....	1
1.2	The EIA, EIA Report and Related Documents	1
1.3	Terms and Definitions	2
1.4	Publicity of the EIA Report	3
2	Site and Surrounding Area.....	4
2.1	Overview.....	4
2.2	Site Selection and Refinement	4
2.3	Refining the Site Boundary.....	4
2.4	The Site	5
2.5	Environmental Characteristics and Designations in the Surrounding Area	7
2.6	Cumulative Development	8
3	The Proposed Development.....	10
3.1	Overview.....	10
3.2	Design Strategy	10
3.3	Overview of Development	11
3.4	Construction	12
3.5	Operation.....	15
3.6	Decommissioning	15
3.7	Embedded Mitigation.....	15
4	Assessment of Effects.....	16
4.1	EIA Process and Methodology	16
4.2	Chapter 6 - Socioeconomics	16
4.3	Chapter 7 - Geology, Hydrology and Hydrogeology	18
4.4	Chapter 8 - Landscape and Visual Amenity.....	19
4.5	Chapter 9 - Cultural Heritage and Archaeology	21
4.6	Chapter 10 - Access, Traffic and Transport	22
4.7	Chapter 11 - Air Quality.....	22
4.8	Chapter 12 - Noise and Vibration	23
4.9	Chapter 13 - Ecology and Ornithology	23
4.10	Chapter 14 - Shadow Flicker.....	26
4.11	Chapter 15 - Aviation.....	26
4.12	Chapter 16 - Other Issues	27
4.13	Chapter 17 - Summary and Impact Interactions	28
4.14	Chapter 18 – Schedule of Mitigation and Monitoring	29

Inset Figures

Inset Figure 1: Main Development Site (taken from Figure 2.1)	5
Inset Figure 2: Road Improvement Site A (Castle Grant) (taken from Figure 2.1).....	6
Inset Figure 3: Road Improvement Site B (Dava bridge) (taken from Figure 2.1)	7
Inset Figure 4: Cumulative Wind Farms within 45 km of the site (taken from Figure 8.12)	9
Inset Figure 5: Site Layout (taken from Figure 3.1).....	12
Inset Figure 6: Indicative Construction Programme	14

Appendices

Appendix A - Plans

1 Introduction

1.1 Overview

- 1.1.1 This report is the Non-Technical Summary (NTS) of the Environmental Impact Assessment (EIA) Report prepared to document the EIA undertaken for the proposed Ourack Wind Farm (the 'proposed development') on land north of Grantown On Spey in the Highland Council (THC) area ('the 'site'). It has been prepared by Stantec UK Ltd on behalf of Ourack Windfarm LLP ('the applicant' - a subsidiary of Vattenfall Wind Power Ltd).
- 1.1.2 The site is made up of three discrete land parcels all located north of Grantown-on-Spey. The 'main development site' is located within THC administrative area¹, approximately 10km north of Grantown-on-Spey, immediately east of Dava and lies approximately 1.8 kilometres (km) north of the boundary of the Cairngorms National Park Authority (CNPA). The main development site extends to approximately 762 hectares (ha) and comprises moorland with a small area near the site access covered by coniferous plantation woodland. The other two land parcels cover areas where consent is being sought for off-site road improvement works to facilitate the delivery of the turbines, referred to as Road Improvement Site A (located in Cairngorms National Park Authority Area, approximately 2Km north of Grantown-on-Spey to the immediate west of the A939) and Road Improvement Site B (further north on the A939 encompassing the Dava Bridge.)
- 1.1.3 The site can be seen on Figure 2.1 - Location Plan, included within Appendix A of this NTS.
- 1.1.4 The proposed development comprises the erection and operation of a wind energy generating station (wind farm) of eighteen wind turbines of up to 180m height-to-tip along with supporting infrastructure. The key supporting infrastructure includes an anemometer (or 'met') mast, access tracks, a substation and battery energy storage compound, cabling and borrow pits. The proposed development is the culmination of an iterative design process that at each stage has responded to feedback from the Energy Consents Unit (ECU) and consultees through successive EIA scoping and pre-application advice processes.
- 1.1.5 The final proposed layout of the proposed development is shown on Figure 3.1 - Site Layout, included within Appendix A of this NTS.

1.2 The EIA, EIA Report and Related Documents

- 1.2.1 This document is a Non-Technical Summary of the EIA Report (EIAR), which can be seen in full on the ECU website. The EIAR presents the findings of an EIA undertaken in accordance with the Electricity Works (EIA) (Scotland) Regulations 2017 (as amended), referred to as the 'EIA Regulations'. Running concurrently with the design process, the EIA has sought to:
- Identify the likely significant environmental effects of the proposed development;
 - Define appropriate design, construction measures and best practice to mitigate likely significant adverse environmental effects and maximise opportunities for environmental enhancements; and
 - Determine the level and significance in the context of the EIA Regulations of the likely residual environmental effects from the proposed development, remaining after all proposed mitigation and enhancement measures have been taken into account.

¹ the A940 is within the jurisdiction of Moray Council and the main development site therefore extends into Moray at the point it abuts the A940 at the access to the site.

1.2.2 The EIA Report comprises the following volumes:

- **Volume 1 – Environmental Impact Assessment (EIA) Report;**
- **Volume 2 – EIA Report Figures and Visualisations**, containing plans, drawings and visualisations, numbered sequentially with the first number referring to the associated EIA Report chapter;
- **Volume 3 – EIA Report Technical Appendices**, containing technical appendices and supporting information referred to in each Chapter of the EIA Report, numbered sequentially with the first number referring to the associated EIA Report chapter; and
- **Volume 4 - Non-Technical Summary** (this report), containing a description of the proposed development and a non-technical summary of the predicted environmental effects and their significance.

1.2.3 There are a number of other documents which form part of the Section 36 application for the proposed development which fall outside of the EIA, including the Planning Statement, Sustainable Design Statement and Pre-Application Consultation Report. These reports can be viewed on the ECU website alongside the EIA Report and accompanying information.

1.3 Terms and Definitions

1.3.1 For ease of reference, the following terms have been used in the EIA Report:

- **The applicant** – Ourack Wind Farm LLP.
- **The proposed development** – the development of 18 wind turbines and associated infrastructure for which consent under Section 36 of the Electricity Act 1989 is being sought, as described in Chapter 3 of the EIA Report.
- **The site** – the development site that is the subject of the Section 36 application, as described in Chapter 2 of the EIA Report and detailed on Figure 2.1 - Site Location Plan.
- **The main development site** – the circa. 762 ha area of the site where the windfarm and associated infrastructure is proposed to be erected, as detailed on Figure 2.1.
- **The road improvement sites** – the two discrete locations at Castle Grant (Site A) and Dava Bridge (Site B) where road improvement works are required to facilitate turbine component delivery, maintenance and decommissioning of the wind farm.
- **The proposed road improvement works** – the construction of the temporary bypass route at Castle Grant and works at Dava Bridge, as described in Chapter 3 of the EIA Report.
- **The Electricity Act** – Electricity Act 1989.
- **The EIA Regulations** - The Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended) and the Town and Country Planning (EIA) (Scotland) Regulations 2017 (as amended).
- **ECU** – the Scottish Government Energy Consents Unit.
- **EIA Scoping Report** – The EIA Scoping report in relation to the proposed Ourack Wind Farm submitted to the ECU on 19 December 2019 (see Appendix 4.1 of the EIA Report).
- **EIA Scoping Addendum** – The EIA Scoping report addendum in relation to the proposed road improvement works for Ourack Wind Farm submitted to the ECU on 9 May 2022 (see Appendix 4.3).
- **EIA Scoping Opinion** – The EIA Scoping Opinion adopted by Scottish Ministers in relation to the proposed Ourack Wind Farm in March 2020 and the subsequent Scoping Opinion addendum issued in June 2022 in relation to the proposed road improvement works (see Appendix 4.2 and Appendix 4.4, respectively).

- **EIA Gatecheck Report** - The EIA Gatecheck report in relation to the proposed Ourack Wind Farm submitted to the ECU on 6 May 2022 (see Appendix 4.5).

1.4 Publicity of the EIA Report

- 1.4.1 A paper copy of this Non-Technical Summary is available free of charge from Stantec, 5th Floor, 9 George Square Glasgow, United Kingdom, G2 1DY. Phone +44 141 352 2360. Email info.glasgow@stantec.com. Printed and/or hard copies of the EIA Report may be purchased by arrangement from the above address.
- 1.4.2 All of the documents provided as part of the Section 36 application and EIA can be viewed in full on the ECU website. Paper copies are available for viewing at Grantown Library - 80 High Street, Grantown On Spey, PH26 3EL.

2 Site and Surrounding Area

2.1 Overview

2.1.1 This chapter of the NTS describes the key environmental characteristics of the site and the surrounding area. The characteristics and sensitivities of the individual receptors which have been identified within relevant Study Areas of each topic chapter of the EIAR, which are used to assess likely significant environmental effects from the proposed development, are described in full in Chapters 6–16 of the EIA Report.

2.2 Site Selection and Refinement

2.2.1 In selecting the site for the development of an onshore wind farm, the applicant gave careful consideration to a wide range of factors including:

- Environmental features (e.g. topography, watercourses, flood risk, habitats, etc.) within the site and the surrounding area;
- The amenity of local communities and their ability to benefit from the community development strategy that accompanies the proposed development;
- Relevant renewable energy and climate change policy considerations;
- Relevant environmental designations and planning policy considerations, including THC's Onshore Wind Supplementary Guidance / Landscape Capacity Assessment;
- Access and ground suitability, including for abnormal loads required to transport turbine components to the site;
- Proximity to grid connections;
- The wind resource at the site (monitored since 2015); and
- Land ownership – the proposed development is being progressed in partnership with the Reidhaven Estate.

2.2.2 Initial feasibility work indicated that moorland east of Dava would be suitable for the development of an appropriately sited and designed wind farm as it benefits from a good wind resource, proximity to grid connections, existing site access junction and limited onsite environmental and technical constraints. This led to the applicant securing a wider lease area of circa. 2,500ha at the site to take forward the proposed development.

2.3 Refining the Site Boundary

2.3.1 In light of consultee feedback on the first iteration of the proposed development design, the EIA project team undertook a two-stage critical landscape-led design review of the site. This review established that the site area should be reduced (within the wider lease area) and set back from the Cairngorms National Park, with turbines positioned to avoid significant breaches of the visual watershed created by the Strathdearn Hills and maintain the integrity of the locally designated Drynachan, Lochindorb and Dava Moors Special Landscape Area (SLA).

2.3.2 In consequence the site area has been reduced by over 50% and the minimum separation distance between the edge of the site and the National Park increased to approximately 1.8 km from 0 km. The resulting site boundary (shown on Figure 2.1 – Site Location Plan) is not subject to any statutory environmental designations, is within a contained upland landscape separated from the Cairngorms National Park, and benefits from relatively level topography.

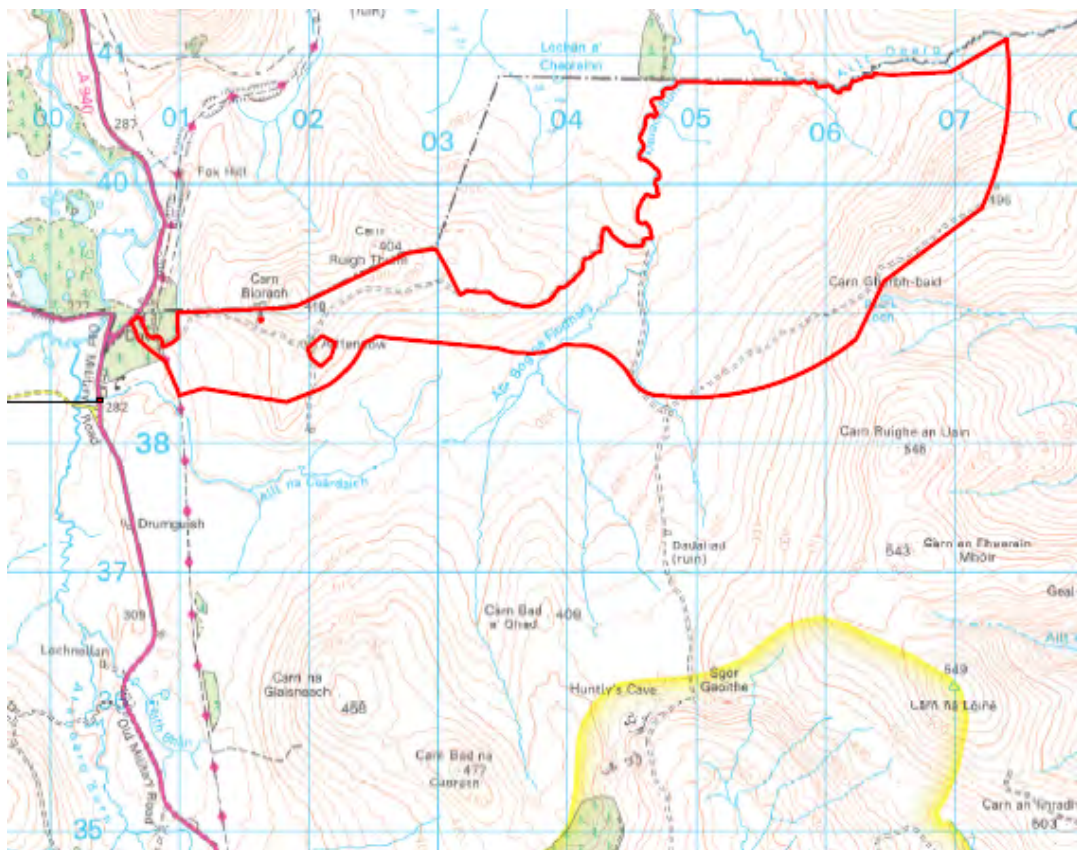
2.3.3 With Scottish Ministers having declared a climate emergency and having set ambitious emissions targets in the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, and this having been reflected in an ambitious new planning agenda as set out in Draft NPF4, it is considered that the site is a suitable location for a wind farm and that now is the appropriate time to take forward consenting applications. However, the applicant is clear that any wind farm development needs to respect the environmental characteristics of the site and surrounding area, and protect the amenity of local residents, both in insulation and in cumulation with other existing and proposed wind energy development in the area.

2.4 The Site

2.4.1 Figures showing the development site, including key features and designations, are included within Volume 2 of the EIA Report. All of the figures are numbered sequentially with the first number referring to the associated EIA Report chapter, i.e. figures showing ecological designations and receptors all start with the number 13, the associated EIA Report Chapter.

Main Development Site

2.4.2 The main development site is located approximately 10km north of Grantown-on-Spey, immediately east of Dava and the A939 and A940. The main development site is principally located within the Highland Council administrative area, however, the A940 is within the jurisdiction of Moray Council and the main development site therefore extends into Moray at the point it abuts the A940. The main development site is approximately 762 ha and comprises moorland (dominated by blanket bog and dwarf shrub-heath vegetation) with a small area covered by coniferous plantation woodland (less than 1% of the total site area - c. 2.5 ha). There is an existing access from the A940 which would be used as access for construction, operation and decommissioning of the proposed development. An excerpt from the Location plan is provided below, showing the main development site boundary.

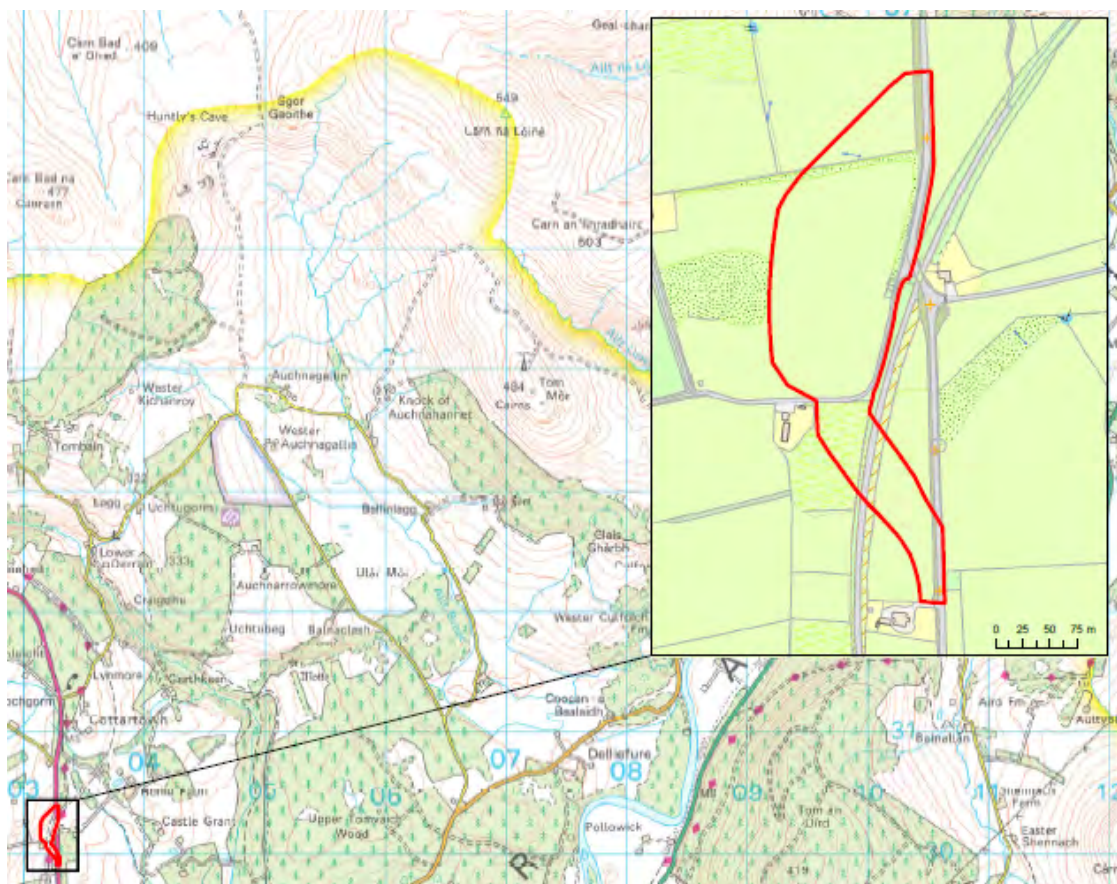


Inset Figure 1: Main Development Site (taken from Figure 2.1)

- 2.4.3 The northern boundary of the main development site abuts the Moray Council administrative area and the Moidach More Special Area of Conservation (SAC), designated for its blanket bog habitat. The southern boundary is approximately 1.8 km north of the boundary of the Cairngorms National Park Authority (CNPA). The proposed development has been refined through multiple design iterations with turbines now set back from the CNPA in the north-eastern corner of the site. The CNPA boundary is now located approximately 1.8 km from the site boundary and 2.11 km from the nearest proposed turbine.
- 2.4.4 The site is wholly located within the Drynachan, Lochindorb and Dava Moors Special Landscape Area (SLA) (designated for its open moorland qualities with long views, panoramas, vast skies, sense of scale and space), but is not subject to any other environmental designations.
- 2.4.5 The turbines are to be sited on relatively level ground, though the gradient of the site rises to the south towards the National Park. The topography also rises towards the north-west and east away from the site. As a result, the site is generally well contained in landscape terms.

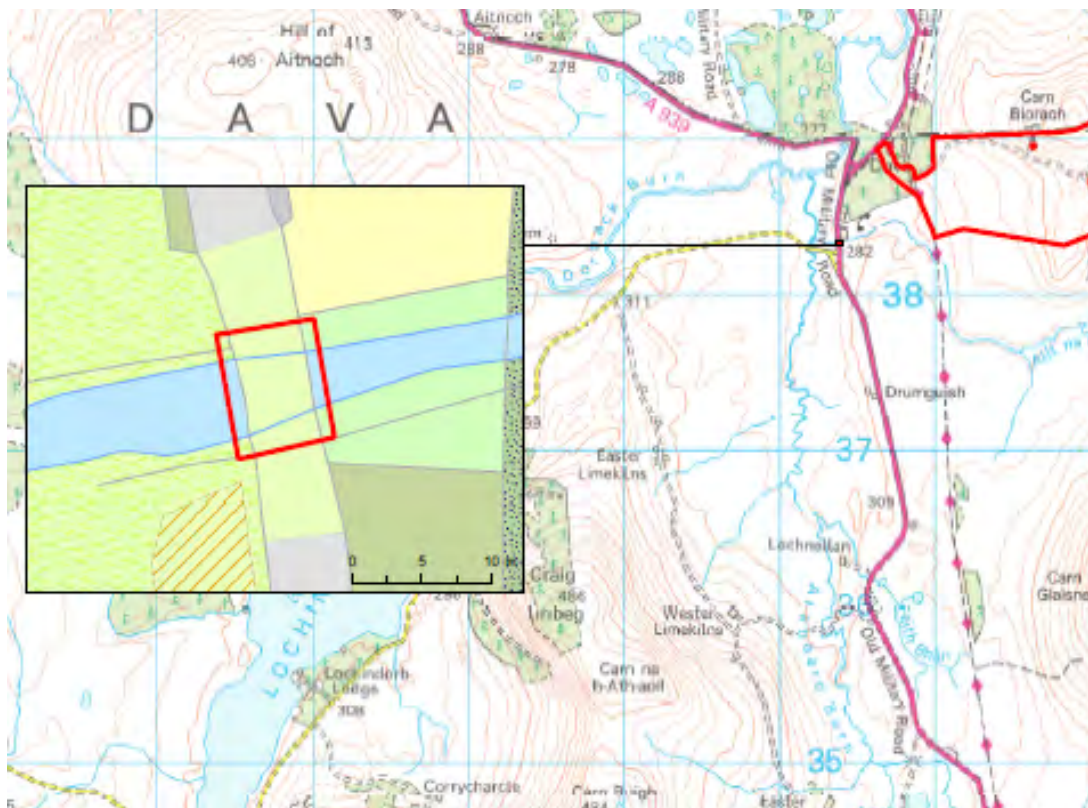
Road Improvement Sites

- 2.4.6 There are two locations away from the main development site where consent is being sought for road improvement works to facilitate the delivery, maintenance and future decommissioning of the turbines – these are referred to as road improvement site A and road improvement site B. Both sites lie on and adjacent to the A939 which forms part of the Highland Tourist Route.
- 2.4.7 Road improvement site A, seen below and on Figure 2.1, is located approximately 2Km north of Grantown-on-Spey to the immediate west of the A939. The site area extends to approximately 4ha and encompasses agricultural land, a section of the Dava Way (one of Scotland's Great Trails) and a section of farm track.



Inset Figure 2: Road Improvement Site A (Castle Grant) (taken from Figure 2.1)

2.4.8 Road improvement site B is located further north on the A939, encompassing the Category-C Listed Dava Bridge.



Inset Figure 3: Road Improvement Site B (Dava bridge) (taken from Figure 2.1)

2.5 Environmental Characteristics and Designations in the Surrounding Area

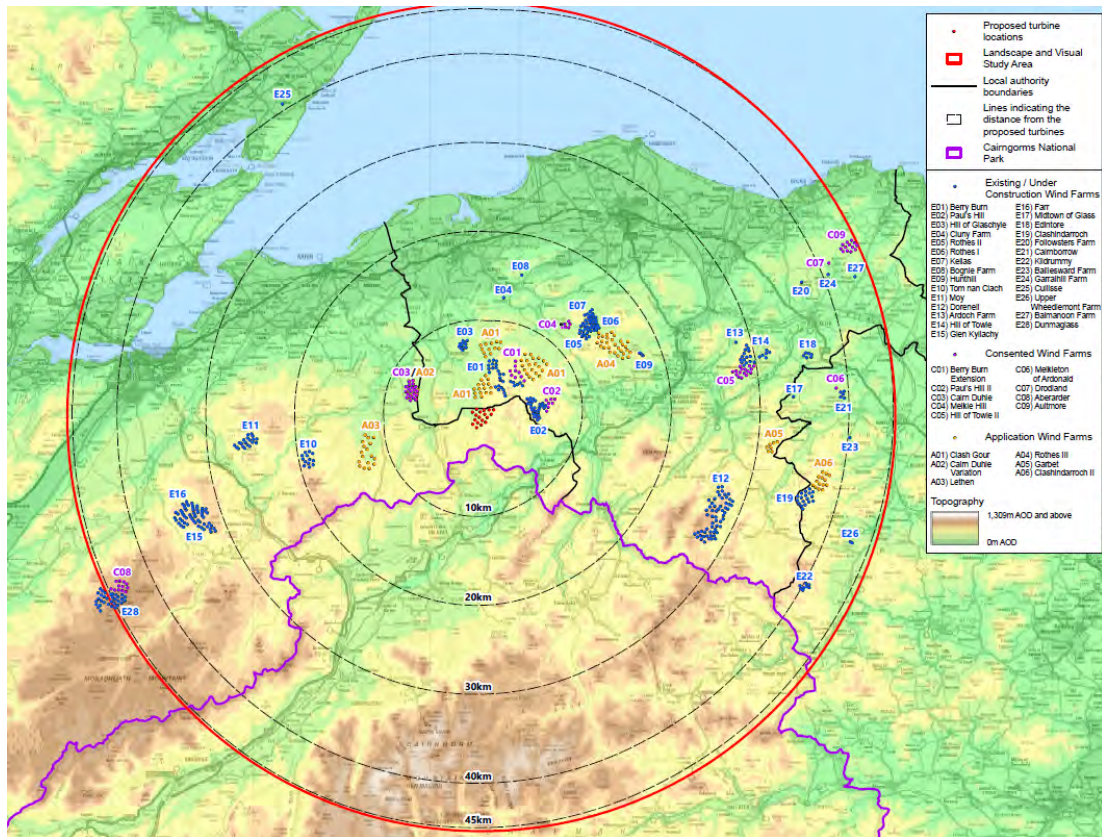
2.5.1 Relevant environmental characteristics and potentially sensitive receptors within the surrounding area are detailed in full within Chapters 6-16 of the EIA Report, as appropriate. In summary:

- Moidach More Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI), which is designated for blanket bog, bounds the main development site to the north. However, the site has no hydrological connectivity with the Moidach More SAC and SSSI.
- The River Spey SAC, designated for freshwater invertebrates, salmon, sea lamprey and otters, is situated within 3km of the main development site but does not have hydrological connectivity with the site;
- The southern boundary of the wider lease area is within 6km of the Anagach Woods Special Protection Area (SPA) and approximately 10 km from Darnaway and Lethen Forest SPA, both designated for breeding capercaillie;
- The Lower Findhorn Wood SAC and SSSI, designated for various types of woodland, is located approximately 9km north of the site, along the banks of the River Findhorn;
- The following designated heritage assets are within 1km of the main development and road improvement sites:
 - an AA sentry box (LB49222) (Category B Listed);

- a bridge over the Dorback Burn (LB354/LB2167) (Category C Listed);
- The Dava Bridge (LB353) (Category C Listed).
- Castle Grant, East Lodge. Railway Bridge Over A939 Road And Entrance Arch To Drive (LB349) (Category A Listed).
- Castle Grant and its associated Inventory Gardens and Designed Landscape (LB348) (Category A listed)
- Castle Grant, Home Farm, Courtyard Range to south including Walls and Gatepiers (LB48934) (Category C Listed)
- Castle Grant, Railway Bridge in Policies (LB351) (Category B Listed), and;
- Designated heritage assets in the wider area include:
 - Lochindorb Castle (SM1231)
 - Aitnoch hut circles (SM4362)
 - Cromdale Inventory Historic Battlefield
 - Grantown-on-Spey Conservation Area

2.6 Cumulative Development

- 2.6.1 The EIA Regulations require the assessment of likely significant cumulative effects from a development proposal in combination with other existing and/or approved development to be described within an EIA Report. Within the surrounding area there are a number of applications for wind energy development at various stages in the planning process, with many already built out and in operation.
- 2.6.2 Tables 2.1 - 2.4 of the EIA Report detail relevant cumulative developments that have been considered in the EIA. The search area for cumulative development to be included in topic specific assessments was derived from the 45km Study Area for the landscape and visual assessment. Existing, consented (but not yet built) and proposed (at application stage) wind farms within 45km of the site can be seen below and in Appendix A to this NTS (Figure 8.12).



Inset Figure 4: Cumulative Wind Farms within 45 km of the site (taken from Figure 8.12)

3 The Proposed Development

3.1 Overview

- 3.1.1 This chapter of the NTS provides an overview of the key characteristics of the proposed development during the construction, operational and decommissioning phases and explains how the design and layout has evolved in response to site constraints and feedback received through successive EIA Scoping and pre-application processes.
- 3.1.2 For full details refer to Chapter 3 of the EIAR – The Proposed Development. The site layout for the main development site is shown on Figure 3.1 in Appendix A of this NTS. Additional plans and elevations showing key aspects of built development proposed at the site, including access upgrades and off-site road improvement works, are provided within Volume 2A of the EIAR.

3.2 Design Strategy

Site Selection and Initial Design

- 3.2.1 As described above, since 2015, Vattenfall has carried out studies to explore the potential to develop a wind farm on the site. In selecting the site, Vattenfall considered a wide range of factors including the amenity of local communities, renewable energy, climate change and planning considerations, environmental designations, access and ground conditions, proximity to electricity grid and wind resource.
- 3.2.2 The Ourack Wind Farm project was subject to initial consultation in 2015-16, at that point comprising a design of up to 50 wind turbines and associated infrastructure on a site extending up to the boundary of the Cairngorms National Park. Iterative design and environmental assessment processes have been used to develop the final proposal, which responds to environmental sensitivities and policy expectations, whilst exploiting the wind resource at the site and deploying the latest and most efficient technologies.

Revised Design Strategy

- 3.2.3 Having regard to feedback provided by consultees on the previous design and changes in wind turbine economics, technology and policy expectations, in 2019 a revised design strategy was launched for the proposed development by a new project team. The critical landscape design review carried out in 2019 established that the site area should be reduced and set back from the Cairngorms National Park area, with turbines positioned to avoid significant breaches of the visual watershed created by the Strathdearn Hills and maintain the integrity of the Drynachen, Lochindorb and Dava Moors Special Landscape Area (SLA). In consequence the site area was reduced by over 50% and the minimum separation distance with the National Park increased to approximately 1.8 km. The resulting site boundary is not subject to any statutory environmental designations, is within a contained upland landscape separated from the Cairngorms National Park, and benefits from relatively level topography.
- 3.2.4 In overall terms, this revised strategy has afforded greater protection to environmental sensitivities as it proposes the installation of a reduced number of turbines at higher blade-tip height within a reduced site area. In consequence, the site and individual proposed turbines are located at greater distance from the Cairngorms National Park with a reduced effect as a result.
- 3.2.5 The final design of the development has been based on the requirements of national and local policy, taking into account environmental conditions, public consultation and responding to the constraints and opportunities of the site. Further information on the design evolution process and outcomes, including with respect to landscape, peatland and access refinements and abnormal load routeing, can be found in Chapter 3 of the EIA Report. A standalone Landscape Design Statement is provided as Appendix 3.1 of Volume 3.

Consideration of Alternatives

- 3.2.6 The EIA Regulations require an EIA Report to include a description of the reasonable alternatives (for example in terms of project design, technology, location, size and scale) studied by the developer, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.
- 3.2.7 The site is considered suitable for wind energy development and the main alternatives studied by the developer relate to development design within the wider site. As described above, the design has undergone a landscape-led evolution which has reduced the number of turbines and increased the standoff to the Cairngorms National Park Area and sought to maintain the integrity of the Drynachan, Lochindorb and Dava Moors Special Landscape Area (SLA). A comparison of landscape and visual effects associated with the proposed and alternative design from key viewpoints is set out within the Landscape Design Statement in Appendix 3.1. This illustrates the extent to which adverse environmental effects have been reduced and explains main reasons for selecting the chosen option for the final development design.
- 3.2.8 The EIA and design team have sought to reduce the extent of adverse effects on all other identified environmental constraints, including but not limited to Moidach More Special Area of Conservation (SAC) peatland habitats, watercourses, deep peat, topography, residential amenity and archaeological interests. Chapter 3 of the EIA Report provides clear reasoning for the choices made and the technical assessments provided demonstrate the extent to which adverse effects have been minimised through careful and considered design. Where adverse effects are unavoidable these have been reduced as far as practicable through the application of mitigation and enhancement. Stakeholder and consultee feedback has been considered throughout and the design has sought to respond to concerns raised.
- 3.2.9 In terms of abnormal load routing, the main alternatives considered by the developer are outlined in Chapter 3 and Appendix 3.5, along with the main reasons for selecting the chosen option. For the works required on the chosen route, alternatives have been considered with respect to works at Dava Bridge and Castle Grant. The final design for arrangements at Castle Grant will be subject to further consultation and refinement at detailed design, with input from consultees, to further reduce adverse effects and identify appropriate enhancement.
- 3.2.10 The Landscape Design Statement is provided as Appendix 3.1. Plans showing previous iterations of the site layout referred are provided as Figures 3.2 - 3.4.

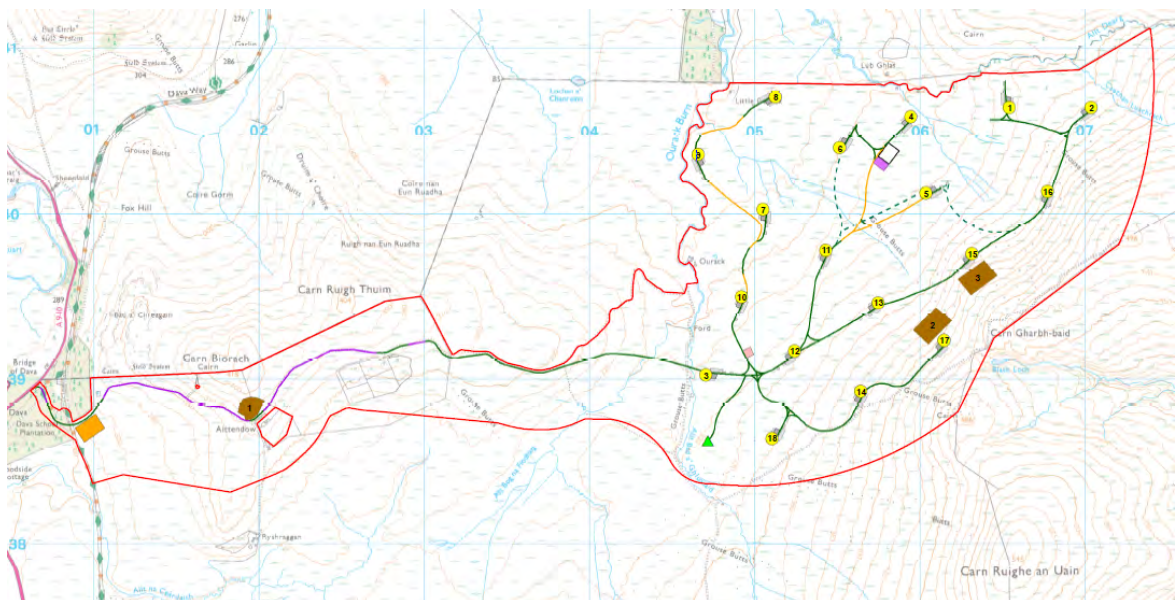
3.3 Overview of Development

3.3.1 The proposed development comprises the erection and operation of a wind energy generating station (wind farm) of 18 Wind Turbine Generators (WTG) of up-to 180m in height-to-tip with an approximate aggregated capacity of 105MW, along with related ancillary infrastructure. The proposed ancillary development comprises the following:

- Anemometer mast;
- Substation compound with control building and network operator building;
- Circa 50MW battery storage and associated compound with control room, containerised storage modules and invertors/ transformers;
- Temporary site compounds, laydown and storage areas and associated construction infrastructure, including a concrete batching plant;
- Upgrades to existing site entrance junction on the A940, including vegetation clearance, and to the existing track leading from the junction into the site;

- Internal access tracks to connect proposed WTG locations and other infrastructure to the site entrance;
- Three borrow pits: one at the western extent of the site and two search areas to the eastern end of the site;
- WTG foundations;
- Crane hardstanding adjacent to each WTG;
- Aviation lighting (subject to CAA approval);
- Buried electrical cabling between WTG and substation compound; and,
- Offsite road improvements, specifically on the A939 at Castle Grant and Dava Bridge.

3.3.2 For full details of the proposed development, refer to Chapter 3 of the EIA Report - The Proposed Development. An excerpt from the Site Layout is provided below (see Appendix A).



Inset Figure 5: Site Layout (taken from Figure 3.1)

3.4 Construction

Overview

- 3.4.1 It is anticipated that construction will last approximately 19 months, commencing in summer of 2026. An indicative construction programme is provided overleaf (taken from Chapter 3 of the EIA Report) which sets out the expected construction tasks, their order and duration. The end of the construction period aligns with the expected timeframe for receiving a grid connection from the network operator, SSE, and commencing operation.
- 3.4.2 Section 3.5 of the EIA Report provides full details of construction phase considerations, including site access upgrades, construction compounds and other temporary infrastructure, off-site road improvement works for abnormal load deliveries and general construction traffic.
- 3.4.3 An Outline Construction Environmental Management Document (CEMD) is provided setting out the principles and structure of environmental management at the site during construction.

Mitigation measures proposed for inclusion in the CEMD, to be implemented at the site throughout the construction phase, are set out in each technical chapter, as appropriate, and summarised in Chapter 18 of the EIA Report (Schedule of Mitigation and Monitoring). An updated CEMD would likely be required by planning condition attached to any consent.

Delivery of Turbine Components

- 3.4.4 A number of studies have been undertaken to identify the most suitable route for the delivery of larger turbine components. The following routes from Invergordon / Inverness were considered and assessed:
- via the A9 and A96 (to Forres), A940 to site;
 - via the A9 and A95 (to Grantown-on-Spey), A939 to site; and
 - via the A9 and A96 (to Nairn), A939 to site;
- 3.4.5 The route via Forres was not considered appropriate due to the limited negotiability at the A96 King Street/A96 St Ninian Road roundabout, the bridge over the River Divie and Knockach Bridge and the A96/A940 junction in Forres. The route via Nairn was also discounted due to the limited negotiability at the A96 King Street/A96 St Ninian Road roundabout, the turn onto the A939 from the A96 in Nairn and the right-hand bend opposite Househill Farm Shop.
- 3.4.6 The 'southern delivery route' via the A9, A95, Grantown-on-Spey and the A939 to site is the preferred and proposed access route for abnormal loads. To avoid direct impacts on the East Lodge Listed Buildings at Castle Grant, including a gatehouse which the A939 passes through at a tight double bend, a localised bypass route is proposed off the A939. Minor works are also required at the C-Listed Dava Bridge which provides a constraint due to its width and the height of its parapet walls, which constitute a collision risk for the turbine blades.
- 3.4.7 The proposed abnormal load routing is provided as Appendix 10.1. Further details on the works required along the route is provided in Chapter 3 (sub-section on Design Evolution) and Chapter 10 – Access, Transport and Traffic.

Construction Traffic

- 3.4.8 Other general construction traffic, including HGVs, is envisaged to access the site from the trunk road network via the A939 (from the north and the south) and from the A940 from the north, as illustrated in Appendix 10.2 - Construction Traffic Routes. To provide a conservative assessment in the absence of a single confirmed route, 100% of development traffic flows have been assumed to use every feasible route. Further details are provided in Chapter 10.

Inset Figure 6: Indicative Construction Programme

Indicative Construction Programme																			
Activity	2026						2027												2028
	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan
1. Site Setup	█	█																	
2. Deforesting / prep marsh areas	█	█	█	█															
3. Quarry and Assembly Areas			█	█	█	█													
4. Borrow Pit Operation		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█			
5. Construct Access Tracks		█	█	█	█	█	█	█	█	█	█	█	█	█					
6. Construct Hardstandings and Foundations						█	█	█	█	█	█	█	█	█	█				
7. Install Wind Farm Cabling											█	█	█	█					
8. Customer Switch Station										█	█	█	█	█	█				
9. Castle Grant bypass route and Dava Bridge works													█					█	
9. Delivery of Main Components														█	█	█			
10. Met Mast Construction and Erection															█	█			
11. Erect WTGs															█	█	█		
12. Energise and commission WTGs																█	█	█	
13. WTG/WF Reliability Run & Grid Compliance																█	█	█	
14. Reinstatement Works																	█	█	█
15. Commissioning + Handover																		█	█

3.5 Operation

- 3.5.1 The proposed development would have an operational lifetime of 35 years from first export of electricity to the grid, anticipated at this stage to be in Q1 of 2028. The electrical output of the wind farm once operational is approximately 105MW, which would be exported to the electricity grid for the duration of the 35-year consent. 100 MW of battery energy storage is included in the proposal to store excess power when overall demand from the grid is low.
- 3.5.2 The upgraded site entrance at the A940 would be utilised for operational phase access to the site, including for period routine maintenance. Operational phase vehicle movements will be limited to infrequent visits by operatives in small vans and cars. In the unlikely event that access is required for emergency turbine repair or replacement during the operational phase, the necessary works would be agreed with the relevant authorities in advance.
- 3.5.3 Aviation lighting is required for the proposed turbines. The lighting scheme is detailed in Chapter 3 of the EIA Report and in Appendix 15.2 (as submitted to the Civil Aviation Authority for approval). No other lighting is required at the site as part of normal operations.
- 3.5.4 Noise from the wind turbines and the battery energy storage modules have been considered fully and are well below the required limits of 35 dB. Further details are provided below.

3.6 Decommissioning

- 3.6.1 At the end of the operational lifetime of the wind farm (35 years from first export of electricity) the proposed development would be decommissioned, unless a separate application was made to re-power the wind farm. This would be subject to its own consenting procedure at that time. Effects associated with the decommissioning process and are covered in each of the EIA technical chapters as relevant.
- 3.6.2 It is expected that a Decommissioning and Restoration Plan (DRP) will be secured as a planning condition attached to any consent, requiring details of the decommissioning process in line with relevant legislation, policy and best practise guidance at that time.

3.7 Embedded Mitigation

- 3.7.1 The proposed development incorporates a number of embedded mitigation measures which are design principles and approaches to avoid, prevent, minimise and compensate for likely significant adverse environmental effects. Where likely or potentially significant adverse effects were identified through the EIA process, the emerging design has been reviewed to consider if additional embedded mitigation can reasonably be incorporated into the design of the proposed development. All relevant mitigation (and enhancement) measures are summarised in Chapter 18 of the EIA Report (Schedule of Mitigation Monitoring) which are proposed to be secured through suitably worded planning conditions attached to any consent.

4 Assessment of Effects

4.1 EIA Process and Methodology

- 4.1.1 EIA is a process that identifies the potential environmental effects (both beneficial and adverse) of a proposed development and proposed mitigation to avoid, reduce and offset any potential significant adverse environmental effects. The EIA process adopted for the proposed development and EIA is set out in full in Chapter 4 of the EIA Report. The legislative and policy context applicable to the planning application and EIA is provided in Chapter 5.
- 4.1.2 A brief non-technical summary of the technical chapters (6-16) contained in the EIA Report is provided below. Further details can be found in the respective chapters of the EIA Report.

4.2 Chapter 6 - Socioeconomics

- 4.2.1 An assessment of the likely significant effects on socio-economics, tourism and recreation from the Proposed Development is provided in **Chapter 6 – Socio-economics, Tourism and Recreation** of this EIAR. This Chapter has been split into a socio-economic assessment and tourism and recreation assessment. It is important to note that this assessment should be read in conjunction with **Chapter 3 – The Proposed Development**; **Chapter 8 – Landscape and Visual Amenity**; and **Chapter 9 – Cultural Heritage and Archaeology**.
- 4.2.2 The Study Areas adopted in this assessment are as follows:
- **Socio-economic and Labour Market Study Area:**
 - Assessed across the Aviemore and Grantown-on-Spey Travel to Work Area (referred to as the ‘Wider Study Area’).
 - Assessed across the Highland Council and Moray Council administrative boundary areas (referred to as the ‘Regional Study Area’).
 - **Tourism and Recreation Study Area:** assessed within a 15km radius of the site, capturing key tourism and recreational assets and ensuring consistency with the 10km Study Area used in **Chapter 8 – Landscape and Visual Amenity** whilst incorporating the nearest key settlements, including Grantown-on-Spey.
- 4.2.3 Taking account of embedded mitigation, the sensitivity of identified receptors and the magnitude of predicted socio-economic changes, the assessment concludes that the Proposed Development is likely to result in the following residual effects:

Construction Phase

- **Net Construction Employment:** approximately 217 net temporary construction jobs will be created within the Wider Study Area over the 18-month construction phase resulting in a **Short-Term Minor Beneficial Effect**.
- **Net Construction Employment:** approximately 240 net temporary construction jobs will be created within the Regional Study Area over the 18-month construction phase resulting in a **Short-Term Minor Beneficial Effect**.
- **Net Construction Gross Value Added (GVA):** generate some £14.0 million net GVA over the 18-month construction phase within the Wider Study Area resulting in a **Short-Term Beneficial Effect**.
- **Net Construction Gross Value Added (GVA):** generate some £15.5 million net GVA over the 18-month construction phase within the Regional Study Area resulting in a **Short-Term Beneficial Effect**.
- **Local Economic Development:** there is an expectation that community benefit clauses should be considered in procurement contracts wherever there is an appropriate legal basis

to do so. This could result in community benefits from the construction phase of the Proposed Development such as engagement with the local community, resulting in a **Short-Term Minor Beneficial Effect**.

- **Tourism and Recreation:** no relevant receptor grouping of the tourism and recreation sector is likely to experience construction phase effects which would be considered significant in the context of the EIA Regulations. As such, the tourism and recreation sector is likely to experience a temporary **Short Term Minor Adverse Effect** from the construction phase of the Proposed Development.

Operation Phase

- **Net Operational Employment:** the lifetime of the project is envisaged to be up to 35-years over which period there is likely to be maintenance and site visits by technicians (to the infrastructure and turbines). It is anticipated that the operation and maintenance of the Proposed Development could support up to £2,456,743 million GVA resulting in 37 PYE jobs in total. As such, this results in a **Long-Term Minor Beneficial Effect**.
- **Onshore Wind Sector:** the Proposed Development has a total generation capacity of 105MW directly contributing towards the UK onshore wind sector, increasing renewable energy capacity within Scotland. As such, this results in a **Long-Term Minor Beneficial Effect**.
- **Local Economic Development:** by working with the local community and key stakeholders, there is potential for the Proposed Development to redirect benefits back into the local economy by implementing the Community Development Strategy and using local supply chains wherever possible. As such, this results in a **Long-Term Minor Beneficial Effect**.
- **Tourism and Recreation:** no relevant receptor grouping of the tourism and recreation sector is likely to experience operational phase effects which would be considered significant in the context of the EIA Regulations. As such, the tourism and recreation sector is likely to experience a **Long-Term Minor Adverse Effect** from the operational phase of the Proposed Development.

Decommissioning Phase

- **Labour Market:** decommissioning of the Proposed Development will result in a **Short-Term Minor Beneficial Effect**.
- **Tourism and Recreation:** decommissioning of the Proposed Development will result in a **Short-Term Minor Adverse Effect**. Post-decommissioning, the reinstatement of the Main Development and Road Improvement Sites will result in a **Long-Term Minor Beneficial Effect**.

Cumulative Effects

4.2.4 The cumulative impact assessment assessed the likely significant cumulative effects in relation to socio-economics, tourism and recreation of the Proposed Development in combination with the cumulative sites presented in **Chapter 8 – Landscape and Visual Amenity**. The assessment concludes the following likely cumulative effects:

- **Labour Market Effects:** the construction of the cumulative developments, in combination with the Proposed Development, has the potential to give rise to cumulative labour market effects and encourage greater levels of investment in the construction sector. This is likely to result in a **Long-Term Moderate Beneficial Cumulative Effect** on the labour market across both the assessed Wider and Regional Study Areas.
- **Sectoral Effects – Construction:** GVA generated through the construction phase of the Proposed Development, in combination with the cumulative developments could act as a stimulus to the wider construction sector and induce multiplier effects. This is likely to result

in **Long-Term Moderate Beneficial Cumulative Effect** on the labour market across both the assessed Wider and Regional Study Areas.

- **Sectoral Effects – Onshore Wind:** the delivery of the Proposed Development in combination with the cumulative sites presented in **Chapter 8 – Landscape and Visual Amenity** (comprised of other wind farm developments) will further contribute towards the UK onshore wind sector and continue to emphasise its strategic importance. This is likely to result in a **Long-Term Moderate Beneficial Cumulative Effect** on the labour market across both the assessed Wider and Regional Study Areas.
- **Tourism and Recreation:** given the conclusions of **Chapter 8 – Landscape and Visual Amenity** and the lack of quantifiable evidence available to indicate that visual impacts alone will materially alter the experiential value of each key component of the tourism and recreation sector (i.e. each receptor grouping), there would be no new or different likely cumulative effects on the tourism and recreation sector from the Proposed Development in combination with the cumulative sites.

4.3 Chapter 7 - Geology, Hydrology and Hydrogeology

- 4.3.1 This chapter and associated appendices presents a detailed review of the soils, geology and existing (baseline) hydrology and hydrogeology at the main development site. Characterisation of existing baseline conditions has included using data and information held by THC, Moray Council (MC), NatureScot and the Scottish Environmental Protection Agency (SEPA), as well as consultation with stakeholders, and detailed and site-specific field investigations.
- 4.3.2 The main development site drains to the River Divie, a tributary of the River Findhorn which is an important fishery resource. The River Divie also drains the Moidach More SSSI and SAC. It has also been shown that there are Private Water Supplies (PWS) near the proposed development. A Private Water Supply Risk Assessment is provided as Appendix 7.4 of the EIAR.
- 4.3.3 There are areas of deep peat within the site. A comprehensive programme of peat depth probing has been completed to delineate these and the site design has avoided these where possible. A site-specific Peat Landslide Hazard Risk Assessment (PLHRA) and Peat Management Plan (PMP) have been prepared to assess and show how peat landslide risk is mitigated and how peat resources on site can be managed and safeguarded.
- 4.3.4 A commitment to deploy Sustainable Drainage Systems measures is made to control both the rate and quality of runoff shed from the proposed development which will ensure existing water flow paths are maintained, no increase in flood risk, and existing water contributions to water dependent habitats are maintained.
- 4.3.5 The assessment has shown, subject to the adoption of best practice construction techniques shows that the proposed development would not result in a significant effect on soils (inc. peat), geology, or water (hydrology or hydrogeology) including PWS and Moidach More SSSI and SAC.
- 4.3.6 In order to confirm there are no impacts on water resources monitoring of water quality in the principal watercourses that drain from the main development site, as well as the PWS outlined within the Private Water Supply Risk Assessment (PWSRA) (Appendix 7.4 of Volume 3) will be undertaken during the construction phase It is also proposed a geotechnical risk register is maintained during the construction phase and likely form part of an updated CEMD/P.
- 4.3.7 The best practice and embedded mitigation detailed for the main development site is wholly applicable to the proposed road improvement sites and as a consequence the soils, geology, hydrogeology and hydrology at these sites will not be impaired.

4.4 Chapter 8 - Landscape and Visual Amenity

Main Development Site

Landscape

- 4.4.1 Landscape Effects are concerned with how the proposed development would affect the elements that make up the landscape, its distinctive character, and related landscape planning designations.
- 4.4.2 There would be a localised significant and cumulative effect on the Open Rolling Uplands within 2-4km of the proposed turbines, affecting more limited areas to the north and west within 4-6km of the proposed turbines. The cumulative effects associated with the proposed development would overlap with the effects of existing and consented development, although the operational periods for some of the existing development are nearing the end of their consented periods of operation.
- 4.4.3 There would be a significant effect on part of the Drynachan, Lochindorb and Dava Moors SLA although the proposed development would not significantly affect the integrity of the SLA or its central SLQ's associated with Lochindorb and Lochindorb Castle.
- 4.4.4 There would be no significant effects on the Cairngorms National Park.

Visual

- 4.4.5 Visual effects are concerned wholly with the effect of development on views, and the general visual amenity that would be experienced by people in the landscape.
- 4.4.6 Significant visual effects would be limited to a short section (1.5km) of the A939 Highland Tourist Route as it passes the consented Cairn Duhie Wind Farm and views from parts of four recreational routes, including part of the Dava Way, and the summit of the Knock of Braemoray and Creag Ealraich. Views of the proposed development from these locations would be experienced within a large-scale moorland landscape, often nestled within low hills and backdropped by other existing and consented wind farm development.
- 4.4.7 There would be no significant effects on views from settlements or tourist / visitor destinations including Corbett and Munro summits.
- 4.4.8 Landscape related considerations have guided the design of the proposed development and led to a reduction in the scale of the development to 18 turbines at <180m blade tip height.

Night-time Assessment

- 4.4.9 A Lighting Strategy (Option 2) for the aviation warning lights has been provided and assessed in Appendix 8.3 alongside the unmitigated scheme. A summary of the night-time assessment of each option is provided as follows.

Unmitigated Option

- 4.4.10 The unmitigated option would require aviation warning lights on all 18 turbines. There would be a significant effect on the views from within the *Open Rolling Uplands* LCT, which would affect road users on part of the A939 Highland Tourist Route, the A940 and the B9007. There would also be a significant effect on the views experienced by walkers, at night, on up to four recreational routes, including part of the Dava Way two heritage paths and a right of way.

Lighting Strategy Option 2

- 4.4.11 Option 2 would require four aviation warning lights in total. There would be a significant effect on the views from within a reduced area of the *Open Rolling Uplands* LCT, which would affect walkers, at night, on up to three recreational routes, including part of the Dava Way, the Via regia heritage path and the HB25 right of way.
- 4.4.12 Most people, including hill walkers in the area, during the summer months, are unlikely to experience the aviation warning lights. For example, during the summer solstice 2028 the aviation warning lights would switch on at 22.48 and switch off at 03.43 in the morning. Local residents and local road users are more likely to experience the aviation warning lights during the winter months. For example, during the winter solstice 2028 the lights would come on at 16.04 and switch off at 08.21 in the morning. It is reasonable to expect that most people would be commuting or indoors during these periods of colder weather, during the twilight and night, and would experience the aviation warning lights incidentally to their main activity. In practical terms it is considered that few walkers would access the affected routes which are unlit. Navigation therefore would be difficult and the walkers themselves would need to carry torches. The Via Regia and the HB25 Right of Way are even less likely to be visited at night as parts of these routes do not follow a clear track making them difficult to navigate in the dark.
- 4.4.13 Historical meteorological observations from Kinloss² suggest that good visibility is likely to occur for approximately 85% of the time which would allow the light intensity to be reduced to 10% (200 cd) which would therefore represent a more 'typical' or 'realistic' experience of the proposed development. The assessment however has also taken account of the 'worst case' scenario (light intensity emitted from a 2000cd light source), which is likely to occur approximately 15% of the time when visibility is <5km from the lit turbines.
- 4.4.14 Operation of the aviation warning lights would have no adverse effect on periods of sunrise (when the sun disk passes above the horizon and the period just after this) and sunset (the period just before the sun disk passes below the horizon) as the operation is programmed to switch off 30 mins before sunrise and switch on 30 mins after sunset, respectively.

Road Improvement Site A (Castle Grant temporary bypass route)

- 4.4.15 A separate assessment has been prepared for the proposed bypass and associated roadworks at Road Improvement Site A near Castle Grant, which is within the *Cairngorms National Park*. The proposed road works would provide a bypass to the west of the A939 Highland Tourist Route to avoid the Castle Grant East Lodge, railway bridge and entrance arch which are Category A-Listed and form part of the Castle Grant GDL. The Dava Way (one of Scotland's Great Trails) is routed along the former railway line and crosses the A939 via the listed railway bridge. This location along the Dava Way is known as 'Lady Catherine's Halt'.
- 4.4.16 A Landscape Plan would be developed during the detailed design phase with the involvement of stakeholders to ensure the road works can be accommodated sensitively and preserve the setting of the listed East Lodge. It is anticipated that the Landscape Plan would be secured by a separate planning condition.
- 4.4.17 During the construction period, there would be localised and significant landscape effects on a small part of the *Undulating Wooded Farmland* LCT, although the proposals would not have a significant effect on the SLQ of the *Cairngorms National Park* or its integrity.

² Clashindarroch II Wind Farm Supplementary Information, Volume 3A, Technical Appendix 7.3 Night-time Assessment, October 2021.

- 4.4.18 There would be significant visual effects on the views from three residential properties (Greengates, Lynemacgregor Cottage and Auchnafearn, west) and short sections of the A939 Highland Tourist Route (approximately 200m) and the Dava Way (approximately 400m).
- 4.4.19 Post construction the implementation of the Landscape Plan would largely reverse these effects and result in localised benefit and enhancement to the western edge of the Castle Grant GDL and this part of the A939 Highland Tourist Route road corridor.

4.5 Chapter 9 - Cultural Heritage and Archaeology

- 4.5.1 A desk-based assessment and field survey have been carried out to establish the cultural heritage baseline, within the main development site and road improvement sites (Inner Study Area) and in the wider landscape (Outer Study Area). The assessment has been informed by responses to consultation from Historic Environment Scotland (HES), THC, MC and THC Historic Environment Team (HET).
- 4.5.2 Twenty-one heritage assets have been identified within the Inner Study Area, eighteen heritage assets within the main development site and three within the road improvement sites. With the exception of a burial cairn and cairnfield/field system, likely to be of prehistoric date, these are all of post-medieval date and relate to farming settlement and activity.
- 4.5.3 The burial cairn and cairnfield/field system has been assessed to be of heritage value at a regional level and to be of medium sensitivity. Castle Grant GDL (GDL 92) which lies within the road improvement sites is of heritage value at the national level and of high sensitivity. All other sites and features recorded within the main development site and the road improvement sites are of heritage value at either the local level, and of low sensitivity, or are of little or no intrinsic heritage value, and of negligible sensitivity.
- 4.5.4 An assessment of the identified cultural heritage resource within the Inner Study Area, and consideration of the current and past land-use, indicates that there is a low to moderate potential of unidentified archaeological remains of prehistoric or medieval/post-medieval date being present within the main development site and of negligible potential within the road improvement sites.
- 4.5.5 The layout of the proposed development has been designed as far as possible to avoid direct effects on the identified heritage assets within the Inner Study Area. Direct impacts on ten heritage assets, one of high sensitivity (Castle Grant GDL), one of medium sensitivity (cairnfield) and nine of low sensitivity, have been identified. These effects would be avoided, reduced or offset through a programme of mitigation.
- 4.5.6 Within 10 km from the outermost turbines there are three Scheduled Monuments (one with predicted visibility of the proposed development), four Category A Listed Buildings (two with predicted visibility of the proposed development), 14 Category B Listed Buildings (nine with predicted visibility), two Inventory Garden and Designed Landscapes (both with some degree of predicted visibility of the proposed development, and one Inventory History Battlefield (with some degree of predicted visibility of the proposed development).
- 4.5.7 Within 5 km of the outermost turbines there are three Category C Listed Buildings, none of which have predicted visibility of the proposed development.
- 4.5.8 There are no predicted significant impacts on heritage assets within the Outer Study Area (10 km radius from the outermost turbines). An effect of minor significance is predicted on the settings of one Scheduled Monument, two Listed Buildings and two Inventory Gardens and Designed Landscapes.
- 4.5.9 There are no predicted significant cumulative impacts from the proposed development in combination with other cumulative developments in the Outer Study Area.

4.6 Chapter 10 - Access, Traffic and Transport

- 4.6.1 In accordance with relevant guidance, impacts including traffic impact; severance; driver delay; pedestrian amenity, fear and intimidation; accidents and road safety, associated with the construction of the proposed development have been assessed. Potential effects resulting from the operational and decommissioning phases of the proposed development have been scoped out. Consultation with THC, MC and Transport Scotland (TS) has been undertaken and key points raised throughout the process have been addressed within the assessment.
- 4.6.2 The chapter has reviewed the baseline conditions across the network of interest, including the existing road infrastructure, road safety and the presence of any sensitive receptors. Future year traffic flows have been identified in order to review the potential impacts of any traffic generated as a result of the proposed development.
- 4.6.3 The details of the proposed development, as they relate to access, traffic and transport have been set out and the embedded and additional mitigation measures have been detailed. These include:
- Selection of the most appropriate routes for abnormal loads and general construction traffic. ;
 - Conceptual details of the identified road improvement mitigation works and the site access;
 - A Framework setting out the details of a Traffic Management Plan;
 - Details of proposed road condition surveys; and
 - Special measures relating to the movement of abnormal loads and HGVs on the public roads.
- 4.6.4 The assessment of the environmental impacts as a result of the proposed development has identified that, with the specified mitigation measures in place, the likely effects are not considered to be 'significant' in the context of the EIA Regulations. No additional mitigation measures are proposed (or required).
- 4.6.5 An assessment of the potential cumulative effects resulting from the simultaneous construction of identified cumulative development sites has concluded that the assessed environmental effects remain unchanged from those already identified and mitigated.

4.7 Chapter 11 - Air Quality

- 4.7.1 The air quality impacts associated with the proposed development have been assessed in this chapter. The construction activities have the potential to create dust. During construction it is recommended that in accordance with relevant guidance a package of mitigation measures is put in place to minimise the risk of elevated PM₁₀ concentrations³ and dust soiling in the surrounding area.
- 4.7.2 Specifically, the onsite Borrow Pits, as well as offsite road improvements need to be considered as sources of dust to the surrounding residential properties and ecological sites. Moidach More SAC is located directly north of the main site boundary and therefore the potential effect of dust

³ where particles are less than 10 micrometres in diameter they are referred to as PM₁₀. Those less than 2.5 micrometres in diameter are referred to as PM_{2.5}.

deposition on the ecological site has been assessed. With mitigation in place the construction impacts are judged as being 'not significant'.

- 4.7.3 The site does not lie within an Air Quality Management Area (AQMA). Measured NO₂ concentrations at the closest monitoring locations to the site have been well below the annual mean objective in 2019. Background concentrations for the site are also well below the objectives for NO₂ and particulates (PM₁₀ and PM_{2.5}).
- 4.7.4 The proposed development is therefore considered to be in accordance with the requirements of relevant local and national guidance related to air quality which is not considered to be an issue regarding the determination of the application and/or EIA.

4.8 Chapter 12 - Noise and Vibration

- 4.8.1 An assessment has been made of the noise impact of the proposed development during the construction and operational phases. The operational noise assessment has been undertaken according to ETSU-R-97 and the IoA GPG. These are the guidance documents recommended in Scottish Government planning advice for onshore wind turbines.
- 4.8.2 In terms of operational noise, the development can meet both stand-alone and cumulative noise limits for all scenarios derived according to guidance document ETSU-R-97. No significant environmental effects, including cumulative effects, associated with operational noise at any stage of the proposed development are identified.
- 4.8.3 Noise during construction and decommissioning will be insignificant for activity on the main development site. Some audible noise will occur from the transportation of construction material and wind farm components. There will also be some noise from the construction of the bypass route at Castle Grant, but noise levels are within significance thresholds set by THC.
- 4.8.4 Vibration from blasting at the proposed borrow pit near Aittendow will be perceptible at nearby residential properties but will be below accepted limits in Scottish Government guidance. The residents in the vicinity of the site will be informed when blasting will occur and monitoring at the closest property is recommended for the initial period of the activity.

4.9 Chapter 13 - Ecology and Ornithology

Habitats and Protected Species (excluding birds)

- 4.9.1 The assessment has systematically considered the potentially significant effects of the Proposed Development on important ecological features (i.e. sensitive habitats and protected non-avian species, also referred to as IEFs) and any potential cumulative effects that could occur in combination with other relevant projects. The assessment has been informed by baseline data collected from a suite of ecological surveys (completed between 2017 and 2022) and from desk study. The detailed approach to the survey and assessment of potential effects on the IEFs has been agreed in consultation with the relevant statutory consultees.
- 4.9.2 Ecological constraints (i.e. sensitive habitats and important locations for protected / notable species) have been carefully considered during the design process. The potential effects from the construction and operation of the Proposed Development on several ecological features have therefore been avoided, or reduced, through siting infrastructure away from the more sensitive locations. However, it is not possible to avoid all potentially significant effects through the layout design alone.
- 4.9.3 The assessment has identified potentially significant effects on watercourses and salmonid fish (associated with the Ourack Burn, within the River Findhorn catchment) due to the possibility of pollution to surface waters from construction works. On a precautionary basis,

potentially significant effects on bat populations have also been identified for the operational phase of the Proposed Development.

- 4.9.4 Various mitigation measures have been proposed to address these effects. The residual assessment has concluded, assuming that the proposed mitigation measures are implemented effectively, that all potentially significant adverse effects from the Proposed Development (including potential cumulative effects) are avoidable for each ecological feature.
- 4.9.5 Outline species protection plans (SPPs) have been prepared for the relevant protected species. Detailed plans will be developed prior to works commencing on the site and following pre-construction surveys to update the findings of the baseline EIA surveys. The outline SPPs set out the approach that would be followed to ensure that significant effects are avoided during construction and that the works proceed lawfully with respect to the legislation protecting the relevant species.
- 4.9.6 A Bat Protection Plan for the operational phase of the Proposed Development is also proposed. This plan would include various elements to reduce the risk to bats from the wind turbine mortality, summarised as follows:
- Avoiding woodland edge habitats being retained near to the proposed wind turbines;
 - Feathering of turbine blades when idling (i.e. when not generating);
 - Post-construction monitoring of bat activity; and
 - Monitoring of bat mortality through a scientifically robust bat carcass search programme.
- 4.9.7 The proposed monitoring would continue for three years after the site becomes operational. The need for a wind turbine curtailment protocol (which may be turbine-specific), to reduce further the risk of bat mortality, would be determined during this monitoring period (i.e. should monitoring indicated bat mortality rates occurring above what would be considered 'incidental' levels). The details of the curtailment protocol would be approved with THC in consultation with NatureScot.
- 4.9.8 A Fish Monitoring and Protection Plan is to be developed, in advance of works commencing on the Site, which would set out in detail the approach to the protection and monitoring of fish populations (with a focus on salmonid species) prior to, during and following the construction of the Proposed Development. This plan will also include water quality monitoring at various locations on watercourses draining the site and at suitable control sites. Best practice measures are also proposed to be implemented, and monitored by on site environmental specialists, during the construction of the Proposed Development so that the risks of significant pollution to watercourses, and the associated adverse effects on aquatic ecology and fish populations, are avoided or minimised. These measures will be developed in detail in consultation with local fisheries managers and in agreement with THC and other relevant consultees. They are proposed ensure that significant residual adverse effects on aquatic habitats and fish populations will be avoided.
- 4.9.9 Although no significant effects on habitats of nature conservation importance are predicted, extensive habitat creation and enhancement measures are proposed to be developed and implemented, under a proposed HMP, to address the potential effects of the Proposed Development on habitats of conservation importance such as blanket bog and juniper scrub. Native woodland and scrub establishment is proposed within the site to improve woodland connectivity and to address the small loss of coniferous plantation and juniper scrub as a result of the construction of the Proposed Development. The proposed HMP has the potential to result in a net-positive contribution regional objectives for blanket bog restoration in the long-term.

4.9.10 Finally, the assessment has also considered the potential effects of the Proposed Development on the Moidach More SAC/SSSI, which is designated for its important blanket bog habitats and is located to the north of the site boundary. It has been concluded that the construction and operation of the Proposed Development would not adversely affect the integrity of the SAC designation taking into account the potential for any effects to occur in combination with any other plans or projects. A monitoring plan is proposed to ensure that any potential effect arising from changes in deer behaviour as a result of the construction and operation of the Proposed Development do not result in any adverse effects on the condition of the vegetation within the SAC/SSSI.

Birds

4.9.11 The assessment has carefully and systematically considered the potential effects from the Proposed Development on important bird populations and their supporting habitats (referred to in the assessment as important ornithological features or IOFs). There are several species using the site that merit special attention due to their national conservation status as a species, and/or for their potential sensitivity to wind farm development. The detailed approach to the survey and assessment of potential effects on the IOFs has been agreed in consultation with the relevant statutory consultees.

4.9.12 The baseline description of the bird fauna present within the Proposed Development area, and the surrounding zone of potential effect, has been derived from desk study and extensive field surveys completed between autumn 2013 and spring 2021. Surveys were carried out across the wind farm site and the wider study area in order to assess the distribution of wintering, migratory and breeding bird species of conservation concern, focusing on species that are particularly vulnerable to the effects of wind farm development.

4.9.13 The Proposed Development Area is considered to be of regional importance to black grouse, golden eagle, hen harrier, short-eared owl and merlin. There was little evidence of regular movement by migratory geese and swan species across the Proposed Development area, only occasional flight activity at collision risk height was observed during passage periods.

4.9.14 This assessment has considered the various potential impacts arising from the construction, operation and decommissioning of the proposed wind farm, and evaluated the significance of these impacts on the identified key species of interest in the context of their conservation status, vulnerability to wind farm development and the scale of the potential effects.

4.9.15 During construction of the wind farm, adverse effects on birds may arise from loss of habitat and from disturbance associated with construction activities. No significant habitat loss is predicted for any species, taking into consideration the scale of the proposal and the extent of direct habitat loss in comparison to the abundance of similar habitats unaffected in the wider area. Disturbance effects will be mitigated through careful management of construction works and through pre-construction surveys, to avoid disturbance to birds during the breeding season.

4.9.16 During wind farm operation, impacts may arise from collision with turbines and other structures resulting in injury or death, displacement/disturbance from areas where turbines are operating and disturbance by maintenance activities and pedestrian access via newly created site roads.

4.9.17 Collision risk has been assessed using data systematically gathered during flight activity surveys and a standard model used in wind farm EIA. Due to the low levels of flight activity for most species considered in the assessment the effect of wind turbine collision is not considered to be significant at the regional population scale.

4.9.18 The operation of the wind farm could result in impacts through displacement and/or disturbance of breeding birds, potentially reducing breeding success and/or feeding opportunities, which is a form of habitat loss / reduction in habitat quality. This is of particular

concern in relation to golden eagle. The potential effect of displacement on a nearby breeding territory has been carefully considered in terms of the potential displacement effect of the Proposed Development and the potential for cumulative displacement effects with other existing and proposed wind farms. No significant residual effects from the operation of the wind farm are predicted for golden eagle or any other species considered in the assessment.

- 4.9.19 Following consideration of a range of best practice and mitigation measures for the construction, operation and decommissioning phases of the development, the residual (mitigated) effects for all IOFs would be not greater than minor and would not be significant in terms of the EIA Regulations.
- 4.9.20 A Habitat Management Plan (HMP) is proposed to be developed and implemented to improve the quality of blanket bog and to establish native woodland and juniper scrub within the site and adjacent suitable areas. These measures are primarily proposed to offset the effects of the construction of the proposed wind farm on sensitive habitats of conservation importance but would also increase habitat quality and extent for black grouse and breeding moorland waders, helping to address the potential long-term effects from the operation of the Proposed Development on these species. Additionally, within the outline HMP are measures proposed to protect and improve breeding habitats for hen harrier and merlin area in the long-term, focusing on an area that outside of the proposed development. Finally, monitoring of key bird species prior to, during and following the construction of the Proposed Development is also proposed.
- 4.9.21 The potential for cumulative impacts on golden eagle, hen harrier, golden plover and curlew as a result of interactions with the Proposed Development and existing/proposed wind farms in the wider region, has also been considered in this assessment. Based on the available information obtained from the published impact assessments of these proposals and taking into consideration the current favourable conservation status of the regional populations, potentially significant cumulative impacts are indicated for hen harrier, golden plover and curlew.
- 4.9.22 Finally, the assessment has concluded that the Proposed Development would not result in any material adverse effect on any bird populations associated with SPAs in the region or adversely affect, directly or indirectly, any other statutory or non-statutory site designated for its ornithological importance.

4.10 Chapter 14 - Shadow Flicker

- 4.10.1 This chapter has considered the potential for likely significant effects in relation to shadow flicker. The design evolution process has taken into account the potential effects and has sought to minimise these as much as possible, through the careful siting of the proposed turbines.
- 4.10.2 There are no sensitive receptors located within the Study Area and, therefore, there are no predicted shadow flicker effects at any sensitive receptors.

4.11 Chapter 15 - Aviation

- 4.11.1 At a maximum blade tip height of up to 180 m (above ground level), the proposed development is considered to be theoretically detectable by the current Inverness Airport Primary Surveillance Radar (PSR) and be in an area that would have an operational significance to radar based air traffic services.
- 4.11.2 Highlands and Islands Airports Limited (HIAL) are upgrading their current legacy PSR capability, and have already commenced procurement, installation and operation of a wind turbine mitigation radar at Inverness Airport. The implementation of the radar mitigation scheme would ensure that the proposed development would have an insignificant residual effect on the utilisation of the PSR to Inverness Airport Air Traffic Control (ATC) operations.

- 4.11.3 An assessment of Inverness Airport Instrument Flight Procedures (IFP) has been completed, results of the analysis and potential mitigation options are provided in Appendix 15.1.
- 4.11.4 The applicant acknowledges that the proposed development would likely have an effect on the current legacy Inverness Airport PSR system. Through HIAL's new PSR capability, which is expected to be operational ahead of first wind turbine operations at the site, it is considered that an agreement on the use of identified mitigation options will conclude in the proposed development having an insignificant residual effect on Inverness Airport and operations.

4.12 Chapter 16 - Other Issues

- 4.12.1 Chapter 16 is provided to consider other relevant issues relating to the proposed development which are not addressed in Chapters 16 – 16, including Climate Change and Carbon; Telecommunications; and Forestry. A summary of the outcome of the assessment related to each issue is set out below, under their respective headings.

Climate Change and Carbon

- 4.12.2 The Scottish Government's 'carbon calculator' tool supports the process of determining applications for wind energy developments in Scotland, by enabling applicants to calculate the estimated period of 'carbon payback'. This is done by comparing the carbon emissions from developments (including from their construction and any disturbance to peatlands) with the carbon savings attributable to their operation, principally from the generation of renewable energy and the displacement of more carbon intensive forms of electricity generation.
- 4.12.3 The completed tool takes into consideration the carbon emissions associated with the construction, operation and decommissioning of the proposed development.
- 4.12.4 The proposed development is for eighteen turbines with an individual output of between 5.5 & 6MW, with an estimated total aggregated capacity of 105MW. The expected total net emissions of carbon dioxide (CO₂) associated with the proposed development has a value of 194,203 tCO₂ eq. The maximum and minimum calculated values for CO₂ emissions produced, reflecting different input scenarios, are 163,096 t CO₂ eq and 316,388 t CO₂ eq , respectively.
- 4.12.5 The calculations of total CO₂ emission savings and carbon payback time for the proposed development indicates the overall payback period would be between 1 to 2.2 years, when compared to the fossil fuel mix of electricity generation. This means that the proposed development is anticipated to take around 26 months (2.2 years) to repay the carbon exchange to the atmosphere (the CO₂ debt) through its construction.
- 4.12.6 The wind farm would in effect be in a net gain situation following this time period and can then claim to contribute to national objectives.
- 4.12.7 Further information on the calculations and methods used are provided in Appendix 16.1.

Telecommunications

- 4.12.8 Wind turbines have the capability of affecting electromagnetic transmissions by physically blocking or dispersing the transmission/signal. Wind turbines can therefore potentially cause interference to telecommunication links by reflecting and shadowing electro-magnetically propagated signals, including terrestrial fixed microwave links managed by telecommunications operators, and television reception.

- 4.12.9 Consultation was undertaken with British Telecommunications (BT) and Joint Radio Company⁴ (JRC) who confirmed that the proposed development would not interfere with telecommunications links and no further action was required.
- 4.12.10 Whilst operating, wind turbines can potentially interfere with television broadcasting systems. The proposed development is located within the STV North Ltd television region and television transmissions for properties near the development are provided by the Knockmore transmitter group. If the proposed development interferes with these transmissions during its operation, reasonable measures would be put in place such as onsite survey and/or installation of satellite television or upgrades of the current antennae system.

Forestry

- 4.12.11 The proposed development requires 0.35ha of plantation woodland to be felled to facilitate the construction of the upgraded site access, comprising 54 Scots pine and 24 lodgepole pine. Full details are provided in Chapter 16 of the EIAR and Appendix 16.2.
- 4.12.12 Compensatory planting proposals are set out within an outline Habitat Management Plan (HMP) which includes a circa 20 ha area of native woodland planting (suitable mix of native species with a high proportion of Scots pine to increase suitability for capercaillie). The proposed planting would be integrated with the reinstatement of Borrow Pit 1 and connect to existing trees at Aittendow.

4.13 Chapter 17 - Summary and Impact Interactions

- 4.13.1 Chapter 17 has been prepared to build upon the individual technical assessments presented in Chapters 6 – 16 and provide an assessment of likely impact interactions, or synergistic effects. Synergistic effects are effects which arise from the reaction between topic specific effects of a project on different aspects of the environment, or an identified sensitive receptor. The assessment focuses on identifying likely significant synergistic effects on Human Health; Amenity; and Ecological and Cultural Heritage Interests.
- 4.13.2 To identify likely impact interactions and synergistic effects, the chapter considers whether each identified likely residual effect would be likely to interact with any other effects, and what the consequences of this occurring are likely to be, with specific reference to individual receptors under the headings above. In doing so, this chapter also provides a summary of likely significant residual effects from the proposed development.
- 4.13.3 The assessment concludes that whilst a range of beneficial and adverse residual environmental effects are likely to arise from the construction, operation and decommissioning of the proposed development, the interaction of these effects is not likely to result in any additional significant effects on human health, amenity or ecological and cultural heritage interests, or alter the conclusions of the topic specific assessments described above.
- 4.13.4 A range of best practise practice construction measures are identified (see Chapter 18) which will be secured and implemented through a comprehensive CEMD/CEMP. These measures are designed to reduce potential adverse effects as far as practicably possible and will be in place for the duration of construction.
- 4.13.5 During operation there is more limited potential for impact interactions and the assessment concludes that the interaction of identified effects is not likely to result in any additional significant effects on population, human health, biodiversity, cultural heritage and landscape.

⁴ JRC analyses proposals for wind farms on behalf of the UK Fuel & Power Industry to assess their potential to interfere with radio systems operated by utility

4.14 Chapter 18 – Schedule of Mitigation and Monitoring

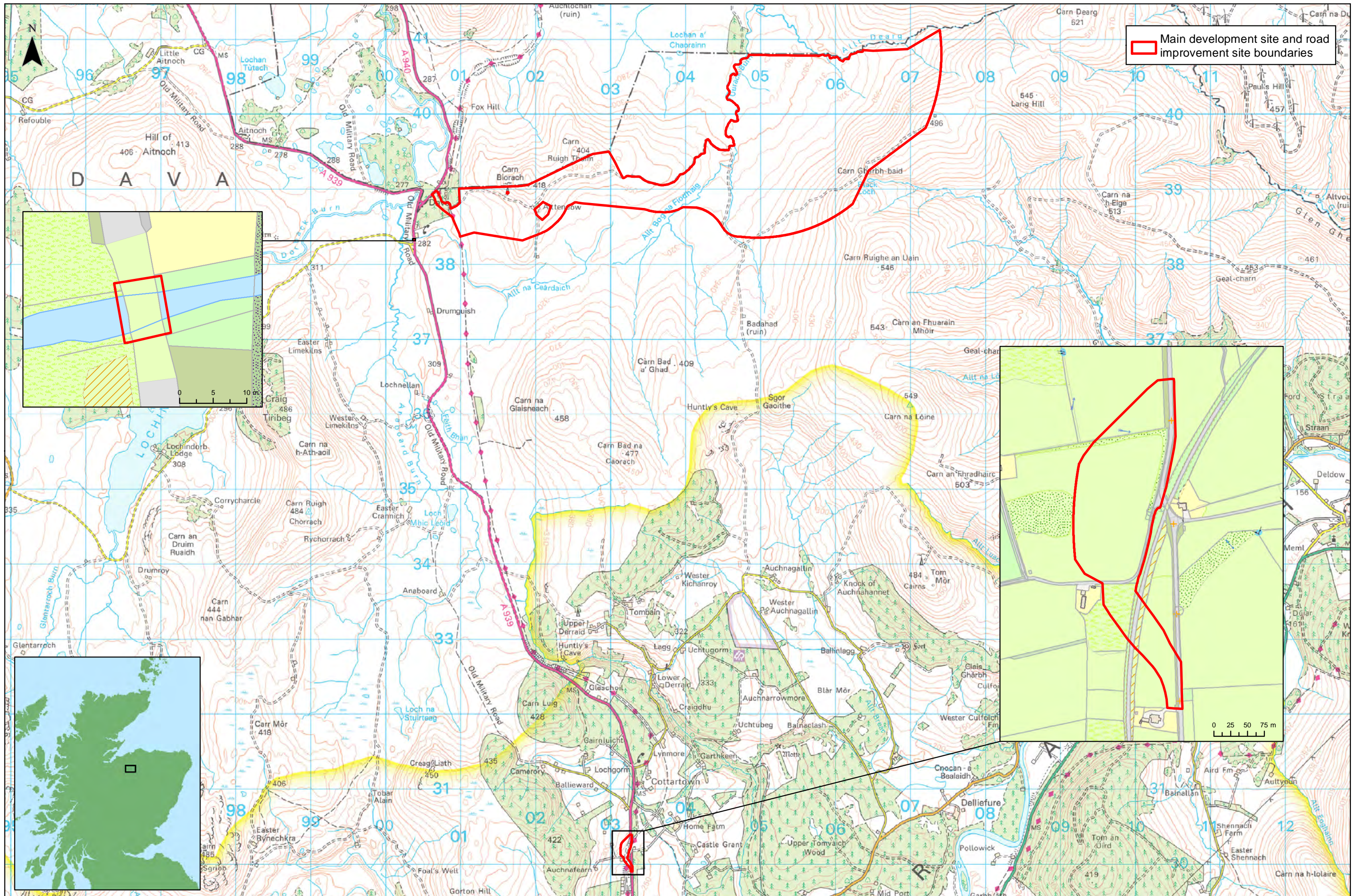
- 4.14.1 This chapter of the EIA Report provides a consolidated draft schedule of mitigation and monitoring measures proposed to prevent, reduce, or offset significant adverse effects from the proposed development. The chapter is provided primarily to assist the ECU as the relevant determining authority and EIA competent authority with its obligation under the EIA Regulations to secure any mitigation and monitoring arrangements within any development consent granted.
- 4.14.2 As described in the EIAR, the proposed development has been refined to reflect environmental and technical constraints identified and mitigation measures were embedded prior to finalising the design of the proposed development, which has minimised the potential for significant environmental impacts. Table 18.1 of Chapter 18 summarises all mitigation, monitoring and enhancement measures committed to by the Applicant during the construction, operational and decommissioning phases of the proposed development.
- 4.14.3 The proposed implementation of identified mitigation measures through conditions attached to any forthcoming consent will secure their undertaking by the Applicant and ultimately provide an enforcement mechanism should this be required.

Appendix A Plans

Figure 2.1 – Location Plan

Figure 3.1 – Site Layout

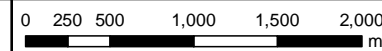
Figure 8.12 – Cumulative Wind Farms within 45 km



Main development site and road improvement site boundaries

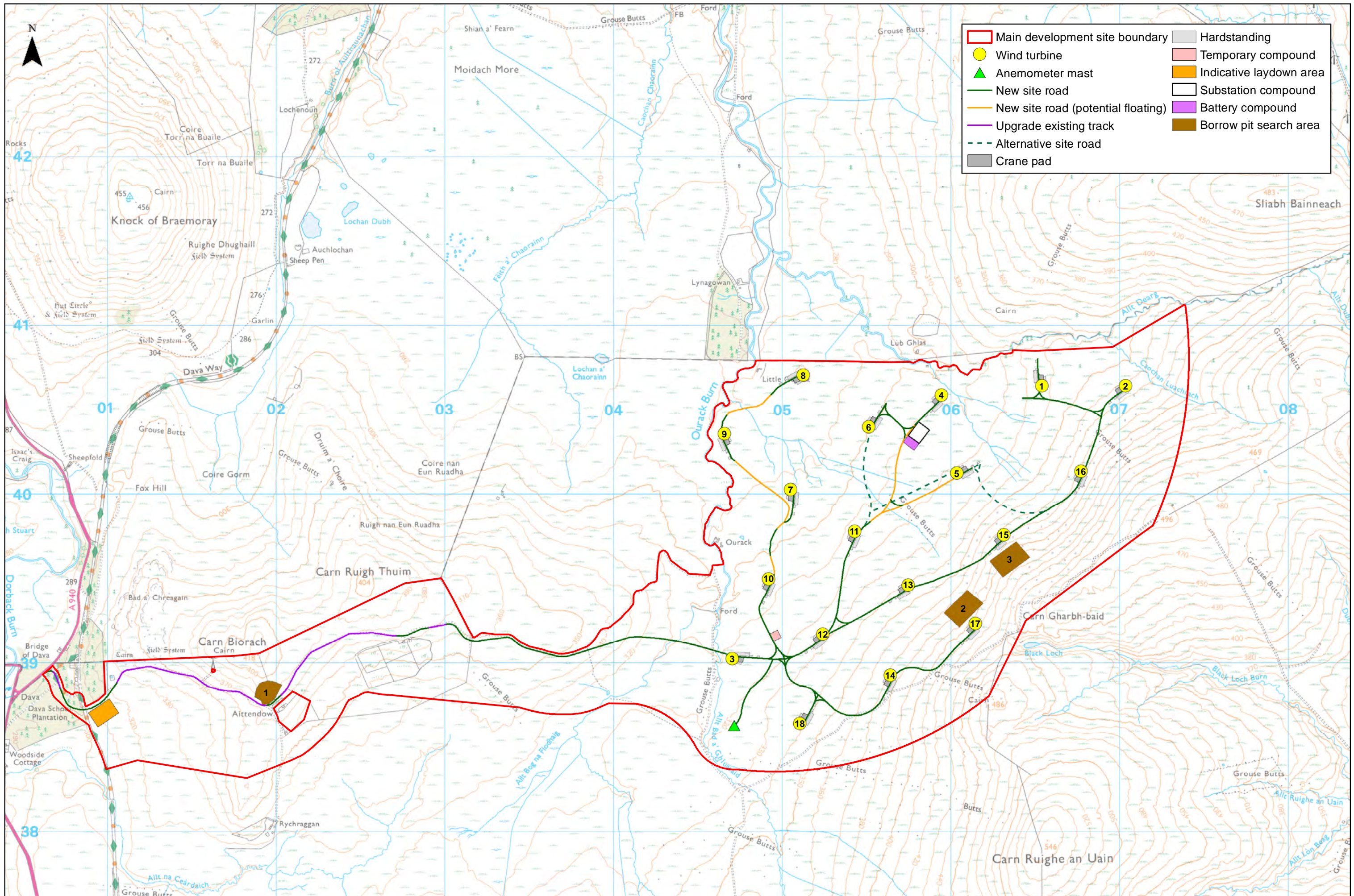


Ourack Wind Farm
Site Location Plan



© Crown copyright, All rights reserved. 2022 Licence number 0100031673. © Vattenfall Wind Power Ltd 2022.

1:45,000 @ A3	Date: 22/08/2022
Drawn: LHOP	Checked: RASM
Figure 2.1	Rev G



Main development site boundary	Hardstanding
Wind turbine	Temporary compound
Anemometer mast	Indicative laydown area
New site road	Substation compound
New site road (potential floating)	Battery compound
Upgrade existing track	Borrow pit search area
Alternative site road	
Crane pad	

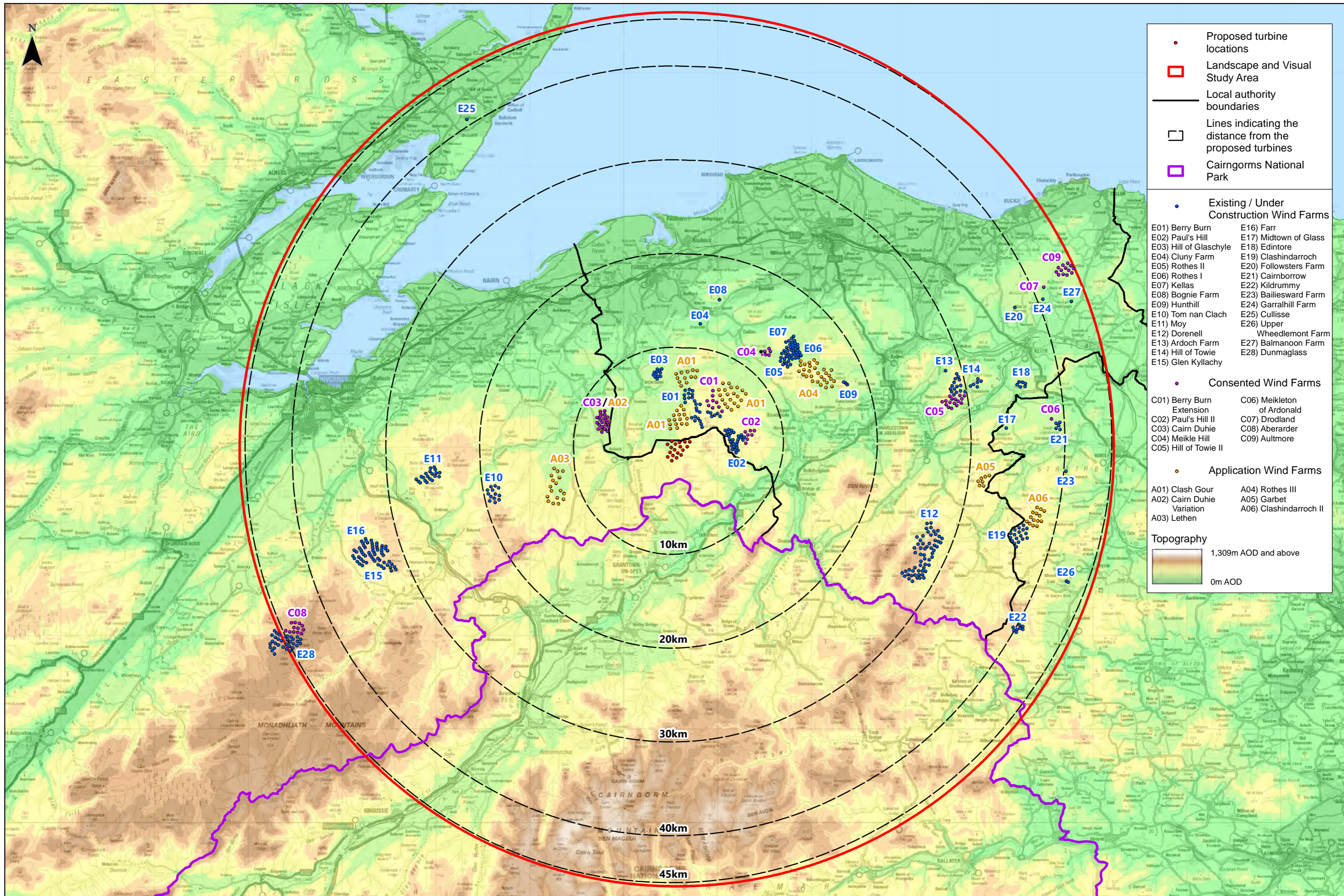


Ourack Wind Farm
Site Layout



© Crown copyright, All rights reserved. 2022 Licence number 0100031673. © Vattenfall Wind Power Ltd 2022.

1:20,000 @ A3	Date: 22/08/2022
Drawn: LHOP	Checked: RASM
Figure 3.1	Rev D



Proposed turbine locations

Landscape and Visual Study Area

Local authority boundaries

Lines indicating the distance from the proposed turbines

Cairngorms National Park

Existing / Under Construction Wind Farms

E01) Berry Burn	E16) Farr
E02) Paul's Hill	E17) Midtown of Glass
E03) Hill of Glaschyle	E18) Edintore
E04) Cluny Farm	E19) Clashindarroch
E05) Rothes II	E20) Followsters Farm
E06) Rothes I	E21) Cairnborrow
E07) Kellas	E22) Kildrummy
E08) Bognie Farm	E23) Baillesward Farm
E09) Hunthill	E24) Garrahill Farm
E10) Tom nan Clach	E25) Cullisse
E11) Moy	E26) Upper Wheedlemont Farm
E12) Dorenell	E27) Balnagoon Farm
E13) Ardoch Farm	E28) Dunmaglass
E14) Hill of Towie	
E15) Glen Kyllachy	

Consented Wind Farms

C01) Berry Burn Extension	C06) Meikleton of Ardonald
C02) Paul's Hill II	C07) Drodland
C03) Cairn Duhie	C08) Aberarder
C04) Meikle Hill	C09) Aultmore
C05) Hill of Towie II	

Application Wind Farms

A01) Clash Gour	A04) Rothes III
A02) Cairn Duhie Variation	A05) Garbet
A03) Lethen	A06) Clashindarroch II

Topography

1,309m AOD and above

0m AOD

Document Path: C:\Users\craig.wilson\Documents\ArcGIS\Ourack\ArcGIS\2022 MXDs\Figure 8.12 Cumulative 805801-WOOD-FG-SA-00012_R6.mxd