Beinn Ghlas Wind Farm Repowering

On behalf of RSK Environment Limited

Appendix 6.13: Deer Assessment

avianecology

CONTENTS

1 INTRODUCTION

1.1 Background

1.1.1 This appendix has been prepared to accompany the proposed Beinn Ghlas Wind Farm Repowering development (hereafter the 'Proposed Development') Environmental Impact Assessment (EIA) Report.

1.1.2 The Proposed Development is located on land near Carn Gaibhre to the east of Beinn Ghlas summit on the Barguillean Estate south-west of Taynuilt, Argyll, Scotland (hereafter the 'Site') as illustrated by the red-line boundary on **Figure 1.1** as presented in in Volume 2 of the EIA Report.

1.1.3 It presents an assessment of the potential implications of the Proposed Development on deer with reference to current NatureScot guidance (2016) and includes consideration of deer welfare and the indirect impacts on other interests including habitat reinstatement, neighbouring land, public roads and qualifying interests of designated sites for nature conservation.

1.1.4 It has been prepared in consultation with Barguillean Estate and following Scoping Opinion received from NatureScot in their response dated August 2022 as detailed in **Table 6.1** of Chapter 6 of the EIA (Volume 2).

1.2 Objectives

1.2.1 The objectives of the assessment are to:

- outline baseline information pertaining to deer and deer management within the Site;
- identify potential issues and impacts on deer arising from the Proposed Development; and
- identify the requirement or otherwise for deer management measures to be implemented as part of the Proposed Development.

2 BASELINE

2.1.1 This section should be read with reference to the following figures presented in Volume 2 of the EIA Report and associated Technical Appendices:

- **Figure 1.1**: Site Location Plan;
- **Figure 2.1**: Environmental Designations;
- **Figures 2 and 3 in Appendix 6.2**: Phase 1 Habitat Plans;
- **Figure 1 in Appendix 6.10**: The Application Boundary, Operational Beinn Ghlas Wind Farm HMP Area and OBE-HMP Study Area;
- **Figure 2 in Appendix 6.10**: The Proposed Fenced Area around all Proposed Turbine Locations;
- **Figure 6 in Appendix 6.10**: Creating and strengthening nature networks: native broadleaved planting;

2.2 Site Overview

2.2.1 The Site comprises low, rugged hills, scattered with small outcrops of rocks and scoured with steep sided streams. Habitats within the Site are suitable for browsing deer with open moorland, predominantly upland heath and mires including bog pools, on the higher ground and a mixture of rough grassland and woodland on the lower slopes.

2.2.2 Within the surrounding area there is a combination of native deciduous woodland and commercial coniferous forestry to the north and southeast of the Site. The wider area includes cultivated land and improved grazing but generally the land has been used non-intensively.

2.2.3 A habitat management area was established to the west of the existing Beinn Ghlas Wind Farm to improve grouse habitat, to benefit golden eagle and to provide ongoing monitoring of golden eagle population.

2.2.4 The nearest settlements to the Site are the town of Oban and village of Taynuilt, which are approximately 12 kilometres (km) and 4 km respectively, from the nearest points of the Site. Both are predominantly separated from the Site by a range of hills to the south of Loch Etive. The area surrounding the Site contains several dwellings.

2.2.5 A total of nine designated sites are located within a 10km radius of the Site. The closest designated site is the Glen Nant section of the Loch Etive Woods Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI). It is designated for upland oak woodlands and associated invertebrate, bryophyte and lichen assemblages. It also forms the Glen Naut National Nature Reserve (NNR). It is ca. 1.6km away from the Site.

2.2.6 Further details of the sites proximity to statutory and non-statutory (local) designated sites for nature conservation are provided in **Chapter 6: 'Ecology'** of the EIA Report.

2.3 Proposed Development Overview

2.3.1 Beinn Ghlas Wind Farm is owned by Beaufort Wind Ltd which is a wholly owned subsidiary of Nadara Limited.

2.3.2 The Site contains the existing Beinn Ghlas Wind Farm, comprising 14 wind turbines (54.1 m to blade tip), each with a capacity of 600 kW providing an overall installed wind farm capacity of 8.4 MW. The wind farm has been operational since May 1999, having received a planning permission from Argyll and Bute Council. In July 2021, planning consent was secured to operate the wind farm for an additional ten years to August 2033[1]. The Proposed Development would involve the removal of the 14 operational turbines, replacing them with up to 7 new turbines. Where existing turbines are to be decommissioned and not replaced, habitat reinstatement will be undertaken.

2.4 Deer Species

2.4.1 In consultation with landowners undertaking deer management within the Site and wider area of Barguillean Estate (comprising 5,000 acres of upland hill and moorland), red deer (*Cervus elaphus*) are the principal deer species occurring within the whole estate, with roe deer (*Capreolus capreolus*) being sporadic family units only present in two areas (Fisher's Glen and Angus's Garden/Am Barr wood). Following review of the latest British Deer Society (BDS) Deer Distribution Survey (2023) sitka deer (*Cervus nippon*) are also reported in the region, with potential to be present within the Site.

[1] https://publicaccess.argyll-bute.gov.uk/online-applications/applicationDetails.do?activeTab=summary&keyVal=QRVGM8CHJ6900 (A&BC Reference: 21/00870/PP)

2.4.2 **Appendix 6.1** includes a review of desk study data sourced from the NBN Atlas (1990 to 2022), which included no records of deer from within the Site.

2.4.3 Following multiple surveys of the Site, as detailed in **Appendices 6.2, 6.5, 6.9,** and **6.10,** signs of deer presence were recorded throughout the Site. Impacts from grazing were noted throughout the vegetation, including hoof prints, bite marks, dung and deer tracks, as well as live sightings and camera trap footage of red deer.

2.5 Local Deer Populations

2.5.1 Barguillean Estate's appointed deer managers confirm that red deer are the predominant species that utilise the whole estate and immediate surrounds around the estate. It is reported that there are very few stags, with most deer comprising hind and calves. There are prominently three main groups on the estate comprising of approximately 30 deer on Corachie/Fisher's Glen/Laggan low ground, <50 deer on Laggan high ground and <30 deer on Gorstain/Angus's Garden grazings.

2.5.2 All the red deer on the estate are transitional with very little residency and mainly coming in at night. Where the estate borders Forestry Commission ground the deer pressure is at its greatest and this is where the estate has traditionally shot deer historically. The estate usually does not cull any roe deer unless they venture into the Farmhouse gardens or Angus's Garden.

2.5.3 There are one or two family units of roe deer in Am Barr Wood and Fisher's Glen with the does being present on Laggan Farm lower ground. Three roe bucks are reported in Am Bar Wood and a maximum of five does are located on the Laggan low ground/Fisher's Glen rough pasture.

2.5.4 Current NatureScot guidance (2016) suggests that deer densities of <3-5 deer/km^2 are likely to be appropriate for woodland establishment and blanket bog sites. With approximately 110-118 deer reported in Barguillean Estate, which is approximately 20.2km^2 it is considered that the average density of deer within the estate is likely to be 5.4 – 5.8 deer/km^2 and as such are likely to exceed 3-5 deer/km^2. Deer populations within the Site and surrounding area are considered transient, moving between available shelter and foraging habitats, particularly during the hours of darkness.

2.5.5 For the purposes of assessment, a minimum baseline density estimate of 5.4 – 5.8 deer/km^2 is therefore adopted as an appropriate and precautionary estimate for the Site.

2.6 Sources of Shelter and Grazing Opportunities within the Site

2.6.1 Grassland, blanket bog and heathland on-Site, as well as small parcels of woodland provide attractive browsing opportunities for deer.

2.6.2 Sheltering opportunities are considered limited in the Site itself, with open habitats predominantly present. Adjacent woodlands located south-east of the Site provide extensive and connected sheltering opportunities for deer. Deer are therefore considered to mostly enter the Site at night for opportunistic foraging.

2.7 Sources of Shelter and Grazing Opportunities outwith the Site

2.7.1 Over the whole estate there are large amounts of shelter and grazing for the deer population. The high ground of Laggan Farm, which includes the operational Beinn Ghlas Wind Farm, which is being farmed in a regenerative way, offers a larger grazing opportunity for the red deer population but, because of its lack of trees and shelter, only offers nighttime opportunities.

2.7.2 All the estate's low ground offers greater security for grazing due to increased number of trees and pockets of bog and grassland, but due to the busy estate's farming nature deer only come in at night to opportunistically forage.

2.7.3 The majority of the estate is stock fenced with only two areas with deer fence. These comprise Corachie and the far side of Angus's Garden.

2.8 Local Deer Management Group and Management Plan

2.8.1 The Site and majority of the surrounding area does not comprise part of a Deer Management Area (DMA) and is not covered by any formal Deer Management Group (Association of Deer Management Groups, 2022).

2.9 Current Deer Control

2.9.1 Barguillean Estate has four appointed deer controllers who hold the DSC1 licence. Two operate on Laggan Farm and two operate on Barguillean Farm.

2.9.2 Recent cull numbers reported within and adjacent to the site are summarised in **Table 2.1**.

Table 2.1 Recent deer cull numbers relevant to the Site.

Compartment	2021	2022	2023
Barguillean Estate	Red: 8 Roe: 2	Red: 8	Red: 10

2.10 Future Baseline

2.10.1 In the absence of the Proposed Development, deer control on the Site would continue in its current form to reduce the pressure on livestock grazing. However, it is the estate's view that the deer cull numbers should increase as the pressure on farming increases. It is considered that 2023 control numbers could be increased at least twofold with no detrimental effect to any local deer populations.

2.10.2 The availability of shelter opportunities within the Site would remain unchanged.

2.10.3 The availability of grazing opportunities provided by grassland, blanket bog and heathland habitats is expected to remain relatively unchanged.

3 POTENTIAL IMPLICATIONS FOR DEER

3.1.1 Potential impacts upon deer resulting from the Proposed Development comprise the following:

- direct loss of shelter opportunities;
- direct loss of foraging habitat;
- displacement of deer onto adjacent land (incl. road networks, statutory designated sites for nature conservation and adjacent forestry compartments); and
- impacts upon habitat restoration following the construction phase of the Proposed Development.

3.2 Loss of Shelter Opportunities

3.2.1 The Proposed Development will result in the direct loss of approximately 1.61ha of woodland habitats (principally coniferous plantation woodland) within the Site to facilitate the installation of infrastructure and access and which may otherwise provide shelter for deer. Of this approximately 0.59 ha will be restocked in situ, principally with coniferous plantation woodland and some mixed broad-leaved trees, and this will be agreed with Scottish Forestry. Furthermore, native broad-leaved

planting (including riparian planting) will be established to create and strengthen woodland nature networks as part of the OBEHMP (see **Appendix 6.10**). This will include two new joined up native woodland corridors, the first from Loch Nant northwards along the Laggan Burn joining up with the existing riparian woodland to the south of Barguillean Farm and the second southwest of Creag a' Chrotha extending northwest along unnamed burns up to Coille Braigh na Cille. Compensatory conifer planting and native broad-leaved tree planting for enhancement will benefit deer on-Site through maintaining shelter and foraging resources.

3.2.2 The long-term loss of shelter opportunities within the Site from woodland felling associated with the Proposed Development (given the extent of the area to be re-stocked), and resulting from clearance for infrastructure is very small.

3.2.3 This is considered to not result in an adverse impact upon local deer populations, and the availability of similar habitats within the immediate and surrounding areas is extensive.

3.3 Loss of Foraging Habitat

3.3.1 The Proposed Development will result in the direct and permanent loss of approximately 27.93ha of bog, heathland and grassland grazing resources for deer from within the Site. Such losses are considered to be very small relative to their remaining extent within the Site (particularly when considering also 1.02ha of forestry to be clear-felled and which will provide additional foraging habitat in the short-term). The availability of similar habitats within the immediate and wider surrounding area, available for deer, is also extensive.

3.3.2 The Proposed Development includes for the erection of permanent deer fencing around all turbines (see **Appendix 6.10**). Local deer populations will however be able to continue to be able to move freely within the remainder of the Site.

3.3.3 Given the limited extent of potential foraging habitat loss, as well as the abundance of grazing opportunities available in the wider area, grazing resources for deer populations within the Site and local area will not be adversely affected by the Proposed Development.

3.4 Displacement

3.4.1 Research suggests that deer are not particularly disturbed by the presence of operational wind turbine scheme (Helldin *et al*., 2012 and Reksten, 2016), but do have the potential to be temporarily displaced during operational maintenance works. Such events are however unlikely to be frequent or prolonged and as such would not result in any permanent displacement pressures on adjacent land. Additionally, the majority of deer activity within the Site is restricted to nighttime, and operational maintenance activities are expected to be restricted to daylight hours in all but emergency circumstances.

3.4.2 Construction activities are expected to last approximately 23 months and would be phased across the Site. Decommissioning works would be expected to occur over a similar timeframe, if not shorter at 21 months. During construction and decommissioning works, deer have the potential to be displaced from parts of the Site depending upon the location of works. This may reasonably result in the temporary/short-term relocation of some grazing activities to other parts of the Site away from construction areas, or deer seeking shelter and grazing opportunities in habitats outwith the Site.

3.4.3 In the absence of the Proposed Development, it would be reasonably expected that deer numbers within and adjacent to the Site would continue to be controlled by relevant land managers at levels needed to reduce grazing competition with livestock.

3.4.4 The re-distribution of deer within the Site as a result of construction and operational maintenance works, may however result in additional temporary and periodic grazing pressures within alternative

habitats within and adjacent to the Site, and the potential for adverse impacts upon woodland establishment.

3.4.5 It is considered that designated sites surrounding the Site are not likely to be negatively impacted by the displacement of deer populations. The majority of designated sites situated in proximity to the Site include wooded areas. As the Proposed Development will primarily occupy open habitats utilised by deer for foraging it considered that local deer populations may continue to utilise the same woodland habitats adjacent to the Site and only be displaced to alternative nocturnal foraging grounds surrounding the Site. It is therefore considered that displacement to alternative woodland sites will be limited.

3.4.6 The potential for the displacement of deer onto surrounding roads, is considered to be limited, with the direction of deer displacement reasonably expected to occur into adjacent available woodland cover to the southeast. No anticipated change to existing deer numbers crossing the local road network and potential for Deer Vehicle Collisions (DVCs) is therefore anticipated.

3.4.7 The potential for adverse impacts upon woodland establishment interests within the Site and adjacent forestry compartments, in view of estimated deer population densities within the Site is therefore considered possible as a result of disturbance during construction and operational maintenance works. However, as deer populations principally use habitats within the Site at night and utilise neighbouring woodlands for shelter during the day, it is considered that woodlands will not attract additional deer numbers displaced from the Proposed Development, but will instead possibly contain similar numbers of deer for longer periods should deer not depart to forage at night. However, as the Site is surrounded by an extensive area of suitable foraging habitat, it is considered that deer will continue to forage at night in suitable open habitats surrounding the Site with limited impact on adjacent woodlands.

3.5 Death or Injury

3.5.1 Some temporary, open excavations may be created as part of the Proposed Development within suitable foraging areas. These excavations should be covered outside work hours to ensure that no animal, including deer fall into it. If excavations are left open, boards should be positioned so that any animal can escape. A CEMP will be produced detailing these measures prior to construction works.

3.5.2 The potential for deer collision with plant machinery or vehicles within the site as part of construction, decommissioning and operational activities for the Proposed Development will also be avoided through adherence to on-site speed limits which will be detailed in a future CEMP.

4 RECOMMENDATIONS FOR DEER MANAGEMENT MEASURES

4.1.1 Following the cessation of construction and habitat reinstatement works, access for deer to the Site will be retained, apart from areas including the new turbines that are proposed to include deer fencing. In order to ensure effective restoration of disturbed habitats within working areas (which will be outlined within a Construction Environment Management Plan (CEMP) which will be produced prior to construction works) and impede the objectives outlined within the OBEHMP (see **Appendix 6.10**) there will be a need for deer management.

4.1.2 Potential deer population density estimates of 5.4 - 5.8 deer/km^2 within the Site are slightly higher than the density of 3-5 deer/km^2 generally considered appropriate for woodland establishment and blanket bog restoration, and which would not be obtained on the basis of existing deer management strategies.

4.1.3 In the absence of additional deer management measures, to monitor and ensure favourable deer densities, the efficacy of habitat reinstatement and enhancement proposals may be impeded. Therefore, the following deer management measures are proposed as part of the OBEHMP:

4.1.4 "The two main management techniques to reduce the detrimental impacts of deer on habitats are: (i) fencing, and (ii) culling.

4.1.5 Fencing has been proposed around all turbine locations (Figure 2). The orientation and layout of the fence will be subject to further discussion with the tenant farmer. Deer and stock-proof fencing around the turbine locations would prevent carrion attracting white tailed eagles into the fenced area and therefore reduce their potential for colliding with the turbines. In addition, the stock/deer fencing will exclude deer from the blanket bog and heathland habitats in an area c. 146.219 ha thereby allowing habitats to naturally recover.

4.1.6 Some cattle grazing is likely to be undertaken within the fenced area. A suitable grazing management plan will be agreed with relevant stakeholders, including the landowner, which would enable the blanket bog vegetation in the fenced areas to be suitably restored/managed. As there are areas of peatland restoration within the fenced area, an establishment period for the peatland restoration would be required, i.e. low grazing levels for the first 2-5 years. The condition of the blanket bog would be closely monitored for the 2-5 years throughout lifetime of the wind farm. The stocking density would be based on the vegetation and adjusted as required.

4.1.7 Fencing is not considered a suitable option over the wider OBE-HMP Study Area due to knock-on effects on adjacent unfenced habitats and due to the large size of the OBE-HMP Study Area. Consequently, deer management across the estate including in the deer fenced areas, in the form of culling and monitoring should be undertaken as part of the OBE-HMP.

4.1.8 The guidance for stock density on open bogs is 0.02 livestock units (LU)/ha/yr or 2 LU per 100ha/yr (Peatland Action, 2014). One LU is equivalent of one cow, 0.15 ewes (Peatland Action, 2014). One red deer is considered to be approximately 0.3 LU (Scottish Government, 2015). However, the actual number of deer and stock a particular site can sustain without damage will depend on a range of factors including habitats, topography, soils, altitude, climate and other land uses in the area.

4.1.9 The OBE-HMP aims to:

- Exclude deer and stock grazing around the turbine locations to prevent carrion attracting white tailed eagles.
- Reduce deer density across the OBE-HMP Study Area to a relatively low level for the first 5 years to allow peatland restoration (Objective 2) and riparian planting (Objective 3) to establish with regular monitoring of the condition of the vegetation to inform future deer management.

4.1.10 The Applicant is willing to fund and implement an effective deer management of Study Area for the lifetime of the Proposed Development (likely to be c. 35 years, dependent upon planning conditions if the application is successful). This will include establishing deer numbers, appropriate culling regimes and monitoring the vegetation in consultation with relevant land managers and agencies (e.g. NS and potentially a future Deer Management Group). The condition of the blanket bog would be closely monitored throughout the lifetime of the Proposed Development and the deer management adjusted accordingly[1].

4.1.11 It is worth noting that The Scottish Government has a Programme for Government commitment to "*modernise deer management, implementing the recommendations of the Deer Management Working Group*" and (at the time of writing) is consulting on substantial changes to the management of deer across Scotland. Planned OBE-HMP changes to deer management within the Study Area will conform to the Scottish Government's emerging recommendations on sustainable deer management. "

4.1.12 In order to implement the proposed deer management measures, a Deer Management Statement (DMS) for the Site would be implemented as part of the Proposed Development, with details to be agreed post consent and secured by Planning Condition to avoid adverse impacts.

4.1.13 The DMS will include details of:

- baseline deer density estimates within the Site and/or defined deer management area;
- required deer density estimates to be maintained during the construction, operational and decommissioning phases of the Proposed Development and implementation of the HMP;
- additional deer management measures necessary to achieve required deer densities; and
- protocols for recording and monitoring.

4.1.14 The DMS would be prepared in consultation with relevant stakeholders and interested neighbouring landowners and would be finalised and agreed in consultation with Argyll and Bute Council and NatureScot.

4.1.15 The DMS will prioritise stalking and/or collaborative culling as additional deer management measures to be implemented within the Site.

5 REFERENCES

Association of Deer Management Groups (2022) https://www.deer-management.co.uk/dmgs/deer-management-groups/deer-management-group-map/ [Accessed 17th February 2021].

British Deer Society (2023) *Deer Distribution Survey*. https://www.bds.org.uk/science-research/deer-surveys/deer-distribution-survey/ [Accessed 27th February 2024].

Helldin, J.O., Jung, J., Neumann, W., Olsson, M., Skarin, A., Widemo, F. (2012) *The impacts of wind power on terrestrial mammals*. The Swedish Environmental Protection Agency, Sweden.

NatureScot (2016) *Planning for development: What to consider and include in deer assessments and management at development sites*. Scottish Natural Heritage, Inverness.

Reksten, S.S., (2016) *The effect of a wind farm on native vegetation and area use of three cervid species – A case study in the planning and ecological effects of constructing a wind power plant in Southern Norway*. Master's Thesis, The Department of Ecology and Natural Resource Management.