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Technical Appendix 8.6

Kirkton Energy Park

Deer Management Statement

Kirkton Wind Farm Ltd.

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1 Introduction

1.1 Site Description

The proposed Kirkton Energy Park site is centred on NGR NC 87999, 59788 and is located in Strath Halladale, Sutherland, in the north of mainland Scotland and within the administrative boundary of the Highland Council. The site is located on moorland and grazing land approximately 2.1km to the south of the settlement of Melvich. The site area measures approximately 419.38ha (including the two potential abnormal load turning areas, separate to the main site) and is currently used mainly as grazing land. Access to the site is expected to be from the A836, taking the Kirkton Farm road (near Loch Mor) southward to Kirkton farm and then continuing south to where turbines would be located.

The site is characterised by sweeping moorland and flows, with a relatively small amount of coniferous woodland plantation to the north west of the site. A number of small tributaries run through the site and join the larger Halladale River to the east. Topography ranges from approximately 20 to 160m Above Ordnance Datum (AOD) with the western extent of the proposed site forming the most elevated section.

The boundary of the proposed development is largely outwith and immediately adjacent to the following statutory designated sites:

- Caithness and Sutherland Peatlands Special Area of Conservation (SAC);
- Caithness and Sutherland Peatlands Special Protection Area (SPA);
- Caithness and Sutherland Peatlands Ramsar; and
- West Halladale Site of Special Scientific Interest (SSSI).

There is a small overlap in the north west of the proposed development site to incorporate the entirety of the coniferous plantation there as part of the proposed Habitat Management Plan (**Technical Appendix 8.5: Draft Habitat Management Plan** refers).

1.2 Requirements and Aims of the Deer Management Plan

The NatureScot Code of Practice on Deer Management requires developers to ensure deer welfare is addressed within a development proposal. A developer must also ensure they have assessed potential impacts on deer from habitat reinstatement, creation or enhancement which is being undertaken within the development site as well as any impacts on neighbouring land and interests. The Deer Management Plan (DMP) is thus the vehicle for ensuring these requirements are met.

The DMP can only seek to manage deer populations and habitats on land which a developer controls, however it also requires that neighbouring interests are not impacted.

The general aim of the DMP is to ensure that the four principles of sustainable deer management (as set out in the Code of Practice on Deer Management) are met, namely:

- ensure that wild deer welfare is safeguarded;
- protect and enhance the environment;

- support sustainable economic development; and
- support social wellbeing.

Due to the proximity of the Caithness and Sutherland Peatlands SAC (designated for its heathland, blanket bog, depressions on peat surfaces, mires and marsh saxifrage) one of the main objectives of the DMP will be to ensure grazing levels are maintained at a level not detrimental to the qualifying interests of the SAC.

1.3 Deer in Scotland

Scotland supports four species of deer: red *Cervus elaphus*, roe *Capreolus capreolus*, fallow *Dama dama* and sika *Cervus nippon*. Red and roe deer are true natives with fallow and sika naturalised non-natives.

With no natural predators remaining in Scotland, deer populations often require management to limit their population densities and resulting impact on natural or farmed resources with the majority of management actions being undertaken throughout the winter months.

NatureScot identify red deer in particular as a 'keystone' species which have the potential to modify the wider habitat in the uplands of Scotland. Grazing can provide benefits in some locations but potentially cause significant damage in others especially where the habitat is prone to the effects of grazing, browsing or trampling.

Roe deer, although smaller in size, are associated with limiting native woodland regeneration and establishment. Due to their smaller group sizes, smaller body sizes and more selective browsing than red deer, they are not commonly associated with negative grazing and trampling impacts on open ground habitats.

2 Legislative Context

Deer are protected under the Deer (Scotland) Act 1996 which sets out when, where, how and by whom deer can be taken or killed. The Act defines the periods of the year when killing of deer is permitted which vary according to the species and whether stags or hinds are the focus of the killing.

Authorisations are issued by NatureScot under the Deer (Scotland) Act 1996 to allow individuals to cull deer in circumstances when they would not normally have the legal right to shoot them, for example to prevent deer damaging natural habitats.

3 Baseline

3.1 Consultation

Highland Council were consulted in April 2021 on the scope of the Environmental Impact Assessment Report. Their response stated:

If wild deer are present or will use the site an assessment of the potential impact on deer will be required. This should address deer welfare, habitats and other interests.

Holly Deary, NatureScot Wildlife Management Officer for North Highland was consulted in November 2021 regarding deer counts. She responded that the most recent helicopter count information for the Northern Deer Management Group (DMG) area dates back to 2013. However, the DMG do undertake an annual foot count and data for 2021 was provided with the caveat that it isn't as accurate as helicopter counts but is critical to cull planning and modelling.

3.2 Existing Records

3.2.1 NBN Atlas

Records present on the National Biodiversity Network Atlas (http://data.nbn.org.uk) identify that both red and roe deer are widespread across northern Scotland. Records of the non-native sika deer were also identified.

3.2.2 Herbivore Impact on the SAC

Headley (2006) provides an assessment and evaluation of herbivore impacts on blanket bog in parts of the Caithness and Sutherland Peatlands SAC. While this is now out of date, it provides some historic context.

The majority of high trampling impacts were identified within 2km of the margins of the deer habitat (plantation woodland). With regards to the East Halladale SSSI (which covers Bighouse Estate), the systematic sample points had Low and Moderate combined grazing and trampling impact scores. "Target note" samples were observed in the High combined grazing and trampling impact class and these were noted as being at the northern end of the SSSI within the Sandside and Bighouse estates. They stated:

"It is notable that the transects with the highest number of tracks and with the greatest impact run east-west, which reflects the fact that, in this part of the SAC at least, most of the deer movement appears to be in a north-south direction. It was notable that in many parts of this SSSI there were few definable tracks and consequently this SSSI has one of the lowest densities of tracks per km traversed compared to other SSSIs in the survey. Only one systematic sample point suggests that grazing and trampling pressures on the blanket bog habitat was decreasing and this was in the south-west corner of the SSSI. The only "target note" sample with indicators suggesting increasing browsing and trampling pressure for the whole SAC was observed within this SSSI at the northern end."

3.2.3 NatureScot

The 2021 foot count data for Bighouse Estate, provided by NatureScot, showed 141 stags, 123 hinds and 50 calves across the 7,200 ha to the west of the A897, and 38 stags, 119 hinds and 64 calves across the 7,188 ha to the east of the A897 – this indicates a density on the west of 4.7 per km^2, and 3.1 per km^2 on the east.

3.2.4 Deer Management Plan – Putman 2018

It is noted that the estate is primarily a sporting estate for salmon fishing, deer stalking and pheasant / partridge shooting. Deer counts are undertaken annually although no densities are given. The report identifies that:

"Much of the Estate is under crofting tenure. The bulk of the inbye land runs down Strath Halladale to Trantlebeg and the River Dyke, and (with the exception of the tenant farm at Kirkton) has been ring-fenced with deer fencing to protect croft-land from losses to deer. While the bulk of crofting activity is thus within the area of the deer fence, common grazings extend over some 90% of the hill land and a number of crofters continue to exercise these rights, putting a fair number of sheep to the hill for much of the year on both sides of the strath, but primarily on the East side."

3.3 Sources of Food and Shelter

The majority of the site is a combination of blanket bog and heath. Shelter is limited to a relatively small area of coniferous plantation in the north of the site and very small stands of coniferous plantation in the south. There are areas of recent broadleaf plantation however these are immature and deer are excluded by fencing.

The existing coniferous plantation in the north west will be felled and earmarked for peatland restoration as part of the HMP. This aspect is discussed in detail in the outline habitat management plan (**TA 8.5: Draft Habitat Management Plan** refers). The restored area will be able to support deer however opportunities for shelter will be limited.

There is scope to open up the existing areas of broadleaf plantation to provide shelter for deer. However, this would be a long term aspiration once the trees have grown to a size where they are not susceptible to deer grazing and would require agreement with the landowner.

While the smaller area of plantation forestry in the south of the site will be retained, the available woodland habitat will be limited compared to that currently present.

There is a large forestry plantation approximately 5km south of the site that is likely to provide good shelter for deer. This possibly explains the observation by Headley (2006) that most of the deer movements within Bighouse Estate being North – South.

3.4 Other Interests within or near Kirkton

There were no core paths, long distance walking routes, popular hills or cycle routes within the site that may be affected by deer management activities. Core Path SU19.03 Kirkton – Upper Bighouse is located outwith the site boundary to the east and will be unaffected by deer management activities.

The West Halladale SSSI lies immediately adjacent to the western site boundary, with a small overlap in the north west of the site to incorporate the entirety of the coniferous

plantation there as part of the proposed Habitat Management Plan (**TA 8.5: Draft Habitat Management Plan** refers). While it is listed in "Favourable Maintained" condition for its blanket bog habitat, the last assessment was undertaken in 2002. It also identifies game / fisheries management and forestry operations as negative pressures. The East Halladale SSSI lies on the opposite side of the A897, beyond the Halladale River.

The SSSIs form part of the Caithness and Sutherland Peatlands SAC. The qualifying features and the latest assessed condition of each is shown in Table 1.

Table 1: Caithness and Sutherland Peatlands SAC Qualifying Features and Latest Assessed Condition [1]

Qualifying Feature	Scientific Name	Latest Assessed Condition	Negative Pressures
Acid peat-stained lakes and ponds	Natural dystrophic lakes and ponds	Favourable Maintained (August 2004)	Forestry Operations
Blanket bog	Blanket bogs	Unfavourable No change (June 2017)	Burning Game / Fisheries Management Invasive Species Trampling
Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels	Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea*	Unfavourable Declining (August 2015)	Forestry Operations Water Quality
Depressions on peat substrates	Depressions on peat substrates of the *Rhynchosporion*	Unfavourable No change (June 2017)	Burning Game / Fisheries Management Trampling
Marsh saxifrage	*Saxifraga hirculus*	Favourable Maintained (August 2007)	No negative pressures
Otter	*Lutra lutra*	Unfavourable Declining (September 2011)	Forestry Operations Natural Event
Very wet mires often identified by an unstable 'quaking' surface	Transition mires and quaking bogs	Favourable Declining (June 2017)	No negative pressures
Wet heathland with cross-leaved heath	Northern Atlantic wet heaths with *Erica tetralix*	Unfavourable No change (June 2017)	Burning Game / Fisheries Management Trampling

The Caithness and Sutherland Peatlands SPA shares the same boundary as the SAC. The qualifying features and the latest assessed condition of each is shown in Table 2.

[1] Information available via NatureScot's SiteLink internet page (https://sitelink.nature.scot/site/8218)

Table 2: Caithness and Sutherland Peatlands SPA Qualifying Features and Latest Assessed Condition [2]

Qualifying Feature	Scientific Name	Latest Assessed Condition	Negative Pressures
Black-throated diver, breeding	*Gavia arctica*	Favourable maintained (June 2018)	No negative pressures
Common scoter, breeding	*Melanitta nigra*	Unfavourable declining (June 2013)	To be identified
Dunlin, breeding	*Calidris alpina schinzii*	Favourable maintained (June 2015)	Forestry Operations Water Management
Golden eagle, breeding	*Aquila chrysaetos*	Favourable maintained (August 2016)	Burning Recreation / Disturbance
Golden plover, breeding	*Pluvialis apricaria*	Favourable recovered (June 2015)	Forestry Operations Water Management
Greenshank, breeding	*Tringa nebularia*	Favourable maintained (June 2015)	Water Management
Hen harrier, breeding	*Circus cyaneus*	Favourable maintained (June 2016)	Burning Over Grazing
Merlin, breeding	*Falco columbarius*	Favourable maintained (July 2004)	Burning Recreation / Disturbance
Red-throated diver, breeding	*Gavia stellata*	Favourable maintained (July 2006)	Burning Over Grazing
Short-eared owl, breeding	*Asio flammeus*	Condition not assessed	Burning
Wigeon, breeding	*Anas penelope*	Favourable maintained (June 2018)	Burning
Wood sandpiper, breeding	*Tringa glareola*	Favourable maintained (June 2004)	Burning

The Caithness and Sutherland Peatlands Ramsar shares the same boundary as the SAC and SPA. The qualifying features and the latest assessed condition of each is shown in Table 3.

[2] Information available via NatureScot's SiteLink internet page (https://sitelink.nature.scot/site/8476)

Table 3: Caithness and Sutherland Peatlands Ramsar Qualifying Features and Latest Assessed Condition [3]

Qualifying Feature	Scientific Name	Latest Assessed Condition	Negative Pressures
Blanket bog		Unfavourable no change (June 2017)	Burning Game / Fisheries Management Trampling
Breeding bird assemblage		Favourable maintained (July 2009)	No negative pressures
Dunlin, breeding	*Calidris alpina schinzii*	Favourable maintained (June 2015)	Forestry Operations Recreation / Disturbance Water Management
Greylag goose, breeding	*Anser anser*	Favourable maintained (June 2018)	Burning

The designated habitat within all these designated areas have the potential to be affected by deer management activities.

3.5 Deer Management Group

The Kirkton Energy Park site lies within the Northern Deer Management Group area. The group covers a large area of Caithness & North Sutherland, much of which is within designated areas and forms a large part of the Caithness and Sutherland Peatlands SAC.

[3] Information available via NatureScot's SiteLink internet page (https://sitelink.nature.scot/site/8412)

4 Identification of Potential Impacts

Potential impacts upon deer resulting from the proposed development are likely to arise from:

- loss of foraging habitat for deer;
- displacement of deer onto adjacent land; and
- impacts on habitat restoration.

4.1 Loss of Foraging Habitat

4.1.1 Permanent Loss

The development of Kirkton Energy Park would result in the permanent loss of approximately 15.29ha of heath / moorland grazing resources for deer. This direct loss of habitat is considered to be negligible and represents 3.64% of the area of the development boundary and an even smaller percentage in terms of grazing habitat available in the wider area, outwith the arbitrary planning boundary.

4.1.2 Construction Impact

Some features of the development (i.e. borrow pits, construction compound, and turning areas adjacent to the A836) will result in the temporary loss of habitat. These areas of disturbed habitat will be reinstated post-construction and therefore any habitat loss during construction can be considered temporary, minor and reversible.

Measures will be developed for the stripping, storing and maintenance of turves to ensure habitat reinstatement is successful. Similarly excavations if left open overnight have the potential to trap deer. However, by ensuring a safe means of ingress / egress (i.e. ramps) the risk can be minimised.

4.2 Displacement

There are no proposals for new deer fencing and therefore movement of deer will not be further restricted by the proposed development. However, given the proximity of the designated sites there could be legitimate concerns in relation to increased browsing and trampling not to mention potential welfare issues should the carrying capacity be exceeded. NatureScot provide a general guide of < 3 – 5 deer per km^2 as a sustainable level for blanket bog and woodland. Therefore, current densities are considered to be within this level. Local factors such as soil type, altitude, habitat types and topography will all influence the actual carrying capacity, and monitoring is considered to be key to determining a realistic figure. Research by Helldin (2012) suggests that deer are generally not disturbed by an operational wind farm although there can be an element of disturbance during maintenance works required for the operation of a wind farm. Such maintenance works would however be occasional and are therefore not considered to be a significant factor in displacing deer at this site, particularly given that this is a working farm with significant level of sheep and cattle grazing and an element of tourism (e.g. the regular Buggy tours run by Kirkton Farm).

Given the existing south – north movement of deer within the site, it is considered unlikely that SAC habitats would be damaged due to displaced deer. A draft Habitat

Management Plan (HMP) has been prepared for the site (**TA 8.5: Draft Habitat Management Plan** refers), which includes measures to retain a mosaic of peatland and woodland habitats to ensure the long-term continuity of habitat. The impact on deer welfare due to displacement off-site is thus anticipated to be minimal. However, due to the potential loss of forest habitat (in the north west of the site) any effect, while likely to be small in terms of wider habitat availability, is difficult to predict and habitat monitoring may therefore be beneficial.

4.3 Conclusion

Given that there is an existing Deer Management Group and a Deer Management Plan is already in place for the wider area, it is not considered necessary to produce a separate deer management plan or strategy for the windfarm proposal as it represents a small subset of a very wide area.

However, given the potential uncertainty over displaced deer as a result of the removal of forest habitat in the north west of the site, a monitoring programme is recommended. An outline programme has been provided in Section 5.

5 Actions

It is proposed that the actions should consist of monitoring the potential impact of deer on the available habitat should the removal of the forestry block in the north west of the site proceed. This data would be fed back to Bighouse Estate (if required), to allow them to put in place a best practice plan to regulate deer numbers where monitoring suggests it is required. Recommended monitoring is detailed below.

5.1.1 Monitoring

A: General Sampling Design

Both impact and utilisation will be assessed using the same sampling framework consisting of a network of transect and quadrat plots as detailed below. These plots will be established on a grid layout covering the Caithness and Sutherland Peatlands SAC and its component Site of Special Scientific Interest (SSSI) to the east and west of the site. The forest boundary will be buffered by 1km and a square grid of 30 survey points distributed within this area. Each survey point will consist of 3 no. 2x2m quadrats (impact assessment) and 1 no. 80x1m transect (utilisation).

Designated habitats relevant to deer impacts are:

- Blanket bog;
- Depressions on peat substrates;
- Very wet mires often identified by an unstable 'quaking' surface; and
- Wet heathland with cross-leaved heath.

Where practical, the impact assessment will concentrate on these habitats. Where necessary, impact assessment quadrats will be relocated to coincide with these habitats where/if they exist within 100m of the pre-determined grid layout point.

B: Deer Impact Assessment

An assessment of impact will be undertaken during each monitoring visit (see section E below for schedule). Impacts will be measured in line with NatureScot best practice guidance on assessing grazing and trampling impacts on blanket bogs.

The main parameters to be measured include:

- Trampling;
- Browsing on dwarf heath shrubs;
- Vegetation height; and
- Vegetation type.

Where possible results / sampling effort will be shared with relevant estates.

C: Deer Utilisation Assessment

Utilisation of the survey area by deer will be assessed using Forestry Commission of Scotland (FCS) standard dung count methodology (Swanson *et al.*, 2008). A faecal standing crop (FSC) baseline assessment will be undertaken with subsequent assessments following the faecal accumulation rate (FAR) methodology.

Where FAR methods are used, the second visit will coincide approximately with the timing of the initial baseline assessment to allow a relative increase or decrease in dung to be analysed. This ensures potential confounding differences in utilisation rate due to seasonal effects from year to year are minimised.

The results of post baseline assessments will allow an effective deer utilisation (EDU) rate (deer/km^2) to be calculated. This simply indicates the number of deer using the survey area between FAR first and second visits.

D: Constraints

Deer densities can also vary significantly from year to year depending on the severity of the winter, food availability, local culling or activities such as forest clearance. This information will need to be factored in to any assessment of utilisation.

E: Monitoring Schedule

On the assumption that construction will commence in late 2023 or early 2024 (including felling of existing forestry), the following draft schedule has been produced:

Action	Phase	Timing
Baseline survey	Pre-construction	Summer 2023
Initial report		Winter 2023 / 2024
Year 1 assessment	Post-construction	Summer 2025
Year 1 update to report		Winter 2025 / 2026
Year 3 assessment	Operational – 3 year post-construction	Summer 2027
Year 3 update to report		Winter 2027 / 2028
Year 5 assessment	Operational – 5 year post construction	Summer 2029
Year 5 final report		Winter 2029 / 2030

Depending on the results, monitoring will continue on a 2 – 5 year basis for the life of the proposed development and through to decommissioning.

6 References

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