

Annex – 1 Issues with the potential for negative implications for the River Spey SAC specifically relating to the Peat Slide Risk Assessment and construction and operation of wind farm tracks and turbines within the upland peat habitat.

- 1.1 SNH is concerned that the ES chapters combined have not adequately addressed, nor provided sufficient detail relating to the level of risk to the River Spey SAC from all aspects of the proposal during construction and operation. Furthermore, there is inadequate attention to the mitigation works that may be needed to reduce any risk to an acceptable level. Fundamentally, at this stage, SNH is of the view that there is insufficient evidence to give confidence that the current proposals for locating tracks and turbines within the catchment of the SAC would not result in excessive amounts of runoff along tracks and construction workings. Also that drainage treatment measures would be adequate to cope with the likely volumes of water draining from the site. This could result in ongoing damage to habitats and significant issues for the receiving streams and burns, many of which flow directly to the River Spey SAC.
- 1.2 It is SNH's opinion that the identification and mitigation of risks to the SAC should have been one of the key objectives of the Peat Slide Risk Assessment. Unfortunately, it makes no reference to the SAC. The seriousness of this omission is demonstrated by the fact that the ES indicates that some of the areas proposed for track and turbine construction occur within the catchment of tributaries feeding into the River Spey SAC, and furthermore are located in areas which should be avoided on the basis of slope instability. This gives rise to serious concerns about potential impacts on the qualifying interests of the River Spey SAC both during and after construction. **SNH strongly advises that no decision is made on this application until the risks are more comprehensively identified and assessed. In addition any mitigation or modifications to layout must be tested to see if they would remove any risk that has been identified.**
- 1.3 In order to address these concerns SNH wishes to receive more detailed information on the risks of slippage arising from specific proposals within the Spey catchment; the implications of any such risk for the SAC; the construction techniques that could be used to reduce these risks to an acceptable level, and any relocations necessary to avoid areas that cannot be managed to reduce the risk to an acceptable level. SNH would also wish to receive details of mitigation works to reduce and attenuate runoff and the pick up of sediments and peat, and how these would be implemented on site to provide effective treatment
- 1.4 We require this information before we could fully advise the Scottish Government on the potential impact on the River Spey SAC. SNH therefore submits an interim objection, on grounds of insufficient information, until such information/discussion can be provided that addresses these concerns.
- 1.5 An additional concern is the proposal to use limestone for all tracks, hard standings etc. Given the importance of a low pH for peatland plants, and peat formation, it is surprising that no mention is made of the potential problems that using stone of this type might bring. There is also no consideration of the impact this might have on the pH of the receiving waters and any consequent implications for the SAC

Chapter 7: Project Description;

- 1.6 Page 4, Paragraph 7.26, 5th bullet. There is reference here, as elsewhere in the ES, to a single borrow pit. However, there is reference in Chapter 14 (page 37, paragraph 14.98) to “two borrow pit areas on site”. There is also reference in appendix 8 to the use of several smaller borrow pits. Please could you provide clarification regarding the number of borrow pits,

their location and how they are to be managed. Run-off from such pits could enter the tributaries of the Spey and cause an adverse effect.

- 1.7 Page 10, Paragraph 7.73. There is reference here to the possibility of cable laying away from site tracks. The excavation of cable trenches would have additional impacts on the habitats on the site and could increase the risks of sediment and peat loss into nearby water courses. This risk needs to be assessed more fully together with any detailed measures that could reduce the impacts.
- 1.8 Figure 7.10. The proposed cable trench is much larger in section than that proposed for other wind farms of similar size. These latter adopt a 'trefoil' configuration for the 33kv cables and can be accommodated in trenches less than one metre wide. Consideration should be given to cable configurations that require trenches with a smaller footprint, to reduce the risks of increased runoff and resulting peat erosion.

Chapter 8: Construction methods;

- 1.9 Page 5, Paragraph 8.29, 2nd bullet. It is important that peat and mineral soils are stored and reinstated separately in order of excavation to reduce the potential for vegetation change, and future erosion risk.
- 1.10 Page 6, Paragraph 8.31 appears to describe the wind turbine hard standings as adopting an essentially 'floating' construction. This contrasts with the first paragraph and table 2 of section 1.8 of Appendix 8 (Borrow workings and peat spoil materials) which seems to assume that the hard standings are excavated. However the final paragraph of Section 1.8 of Appendix 8 seems to return to 'floating' construction. Clarity on this would be helpful as the potential impacts of these methodologies are likely to be very different.
- 1.11 Page 9, Paragraphs 8.49 & 8.50. According to Table 2 of Appendix 13 Geology and Peat Slide Risk – (Peat Slide Hazard and Risk Assessment - Factual Report), the peat depth at three of the turbines (5, 58 and 62) is around 2 metres and the impact of excavating and constructing tracks in these areas is a cause for concern. Some further consideration of track routing to avoid deep peat or to use construction techniques that avoid deep excavation of linear trenches would help to reduce risks. The residual risk for the River Spey SAC should be identified specifically.
- 1.12 It is particularly unusual (unique?) to 'float' a construction compound, and the impacts of this must be uncertain at least. It will almost certainly be the case that sub-surface water flows will be disrupted. If floating is considered necessary due to peat depth and nature, then SNH advise that another less difficult location would be more appropriate.
- 1.13 Page 10, Paragraph 8.57. The use of turf is preferred to re-seeding in all circumstances, but particularly on steep slopes where erosion may occur prior to germination and successful establishment. Re-seeding in most cases should be a last resort when there are no better alternatives for specific locations.
- 1.14 Page 12, Paragraph 8.71. Drainage ditches should not be dug alongside the section of temporary floating track associated with any "floating" construction compound (as referred to at Paragraphs 8.49 & 8.50). The purpose of floating something (usually tracks) is to minimise the permanent impact on habitats, hydrology and water movement from temporary constructions. An excavated drainage ditch would cause damage which is permanent even after a temporary track is removed.

- 1.15 Page 13, Paragraphs 8.76 - 8.78. Careful consideration needs to be given to the implications of using limestone in this peatland environment, and potentially on the water quality of the tributaries receiving runoff, especially those flowing into the Spey. That this issue has not been addressed in the ES is an omission that needs specific assessment.
- 1.16 Page 18, Paragraph 8.116. Before constructing any drains to run into “natural gullies” it will be important to check that these do not run directly into water courses and that adequate measures are designed to prevent sedimentation. Please could further clarification be provided on this point

Chapter 13: Geology and Peat Slide Risk;

- 1.17 Page 7, Paragraph 13.26. The description of the peatland as “severely degraded” does not accord with the description in the Terrestrial Ecology Chapter nor with several of the site photographs. Inconsistency across the ES is unhelpful in determining the nature of the site interests and the potential impacts upon them.
- 1.18 Page 18, Paragraph 13.73. Five “natural peat slides” are identified. This contrasts with 11 areas of “peat slippage” identified in the Target Notes at Appendix 11C. Some or all of this possible discrepancy may relate to definitions and to different survey areas. However, it would have been helpful if the ES had addressed this apparent inconsistency. Addressing the discrepancy now would be helpful as it might relate to risk for the Spey SAC.
- 1.19 Page 19, Figure 13.9. Four of the five peat slide areas are in areas defined in Figure 13.12 (Page 23) as “Low Susceptibility to Peat Slides” - not three as identified in Andrew Nolan’s note in Appendix 13. Thus only one of them is in an area defined as “Moderate Susceptibility to Peat Slides”. This does not encourage confidence in the Peat Slide Hazard Zonation Plan. Some explanation, or correction of apparent inconsistencies between the Susceptibility Plan and the location of actual peat slides is necessary to increase confidence in the findings.
- 1.20 Page 23, Figure 13.12. Refer to comments on Appendix 13 – Peat Slide Hazard and Risk Assessment – Interpretive Report, below.
- 1.21 Page 24, Paragraph 13.85 & 13.86. The site of Turbine 53 has the highest Peatslide Hazard Rating System (PHRS) score for the proposed wind farm (175). It is also close to the largest existing peat slide on site, yet according to the assessment system it apparently occurs within an area that it is below the generic threshold for moderate susceptibility to peat slides. Again some explanation of these apparent inconsistencies would be very helpful. The importance of this inconsistency is amplified by the fact that this location occurs within the SAC catchment. SNH’s confusion is compounded by the fact that it is stated that for this turbine “Special care should be providedto ensure peat stability”. Given this combination of circumstances, SNH recommends that this turbine is considered either for removal from the plans or relocation to a less sensitive location.
- 1.22 Page 24, Table 13.3. For several of the turbine positions the proposed action is “Manage by normal slope maintenance procedures”. Unfortunately no comfort can be derived from this commitment as the measures are not defined and there is no reference in the Terrestrial Ecology Chapter to the potential impacts of such “maintenance procedures”. SNH requires clarification of the nature and detail of these proposed actions, especially within the SAC catchment, so that the risks to the SAC can be assessed with confidence.

- 1.23 Page 25, Table 13.4. Similarly, but perhaps more significantly, is the suggestion that two sections of track; 83 → 80 and 83 → 73 → 68 may possibly require peat slide stabilization works. Again these are not defined (other than generically in Section 5.6 of the 'Peat Slide Hazard and Risk Assessment – Interpretive Report' (Appendix 13) and their potential impact is not addressed. SNH requires further detail regarding the peat stabilisation works, how they would be done, the likely effectiveness in the locations proposed, and any residual risks/ impacts.
- 1.24 Most importantly, there seems to be no recognition that these sections of track are relatively close to, and on slopes that drain into, the River Spey SAC. Indeed road section 73 → 68 (described in more detail in Paragraph 13.94) crosses a stream which drains directly into the River Fiddich which is part of the River Spey SAC.
- 1.25 It is of concern that neither Chapter 13 nor Appendix 13, makes any reference to the River Spey SAC in addressing the implications of Peat Slide Hazard and Risk and the consequences of any slippage. It thus appears that potential implications for the River Spey have been ignored. This has important implications for determining whether any peat slide initiated by construction or operational activities on the proposed wind farm might have an adverse effect on site integrity. **This issue clearly needs to be resolved before SNH can determine its position on the proposal.**
- 1.26 Page 26, Paragraphs 13.93 and 13.94. Further to the above comments in relation to potential impacts on the SAC, no clear evidence is presented here to indicate that alternative routes have been considered for these sections of road to avoid the risk of peat slide. It is noted that track configurations have been provided within chapter 6.
- 1.27 Page 29, Paragraph 13.116 states: *“Residual impacts are few in number and mainly involve erosion and mobilization of suspended solids derived from areas disturbed during the course of the project. Most of the residual effects appear likely to be minor and confined to limited areas of the site. The most significant impact is likely to be habitat deterioration”*. Given the proximity of the River Spey SAC to much of the proposed infrastructure, this statement causes particular concern, as erosion and mobilization of suspended solids could have a significant effect on the designated interests. This potential impact needs to be assessed much more carefully.

Chapter 14: Hydrogeology, Hydrology and Hydromorphology;

- 1.28 Pages 37 & 38, Paragraph 14.101. There is reference here to “Storage of excess peat...in a second disused quarry on the site”. This does not appear to be mentioned elsewhere in the ES. Where is this quarry? How is it accessed? Is it big enough to accommodate the anticipated volume of surplus peat (125,200m³ according to Appendix 8 'Borrow Pit Workings and Peat Spoil Materials)? Has it been surveyed to determine if there are any interest features which might be affected by peat storage? These, and related questions, should be addressed.
- 1.29 Page 44, Paragraph 14.135. There seems to be some confusion here regarding the nature and role of peat in storing water. The storage capacity of the peat which is removed during construction is, to all intents and purposes, irrelevant to the volume of subsequent run-off. Once peat is saturated it can hold no more water, so the only effective storage capacity in relation to rainfall etc is that available above the water table, which is small relative to the overall peat mass.

Appendix 8: Construction Details;

1.30 Appendix 8A. Health, Safety and Environmental Management System. SNH welcomes the proposals for a Health, Safety and Environmental Management System and its various Management Plans. SNH is also pleased to note that the Ecological Clerk of Works will have the power to stop the work under certain circumstances. It would be helpful if these circumstances were clearly defined to provide confidence that developing situations could be addressed rapidly on-site, and also to avoid unnecessary frustration and delay.

Appendix 8D Borrow Workings and Peat Spoil Workings;

1.31 Page 4, Section 1.6. The Construction Compound is described as “a floating platform with a single storey building for site offices and welfare facilities”. However reference to Figure 7.2 (Chapter 7, Project Description) indicates that the compound would also contain aggregate storage areas, a concrete batching plant, fuel storage etc. It is not all clear how this can be constructed as a floating platform or how restoration will be undertaken post-construction. Additional information on these points is necessary to assess the short and long term impacts and any consequences for the River Spey SAC.

1.32 Pages 8 & 9, Table 2. For those turbines proposed for areas where the peat depth is greater than 1 m, and more so for those where the peat depth is greater than 2 m, consideration should be given to re-siting to areas where peat depth is more shallow. This would reduce the impact on the peat system and the de-stabilisation risks associated with deep peat excavation.

1.33 Comparison with the data in Appendix 11 G ‘Peat depth and condition survey data’ reveals an apparent anomaly in the peat depths given for Turbines 94N and 95N. Appendix 11G indicates depths of over 1m for T94N and over 2m for T95N. Table 2 of Appendix 8 (borrow workings and peat spoil materials) indicates 0.22. for T94N and 1.40m for T95N. Can this be explained or is it an error?

Appendix 13: Geology and Peat Slide Risk - Peat Slide Hazard and Risk Assessment – Factual Report;

1.34 Table 1 (Page 5) summarises the Rating System, with more detail provided in Annex A. The results of applying the System to each of the turbine base locations are given in Table 2 (Pages 7 – 14).

1.35 A key category in the System is the ‘Potential peat slide severity’. Annex A (Page 35) acknowledges that this is the most subjective category. Considerations in determining a score include the nature of the asset affected, the size of the area affected, the cost of clean up and delay, and the time taken for the asset to recover.

1.36 Of particular concern to SNH in the allocation of results in this category is the complete lack of any obvious consideration of the statutory importance of the River Spey SAC as a potential recipient of eroding peat. There is no distinction between an undesignated environmental asset and a Natura site. Nor is it obvious from the scores given in Table 2, that any such distinction is made. However, from a statutory perspective a very significant distinction exists. Recognition of such a distinction is very much a part of a properly constructed assessment matrix under the Environmental Impact Assessment process.

- 1.37 SNH advises that it is necessary for Table 2, Peatslide Hazard Rating System (PHRS) results, to be reassessed to give due consideration to the likelihood and significance of peat slides affecting the River Spey SAC.
- 1.38 Page 16, Table 3. Road Track section 73 → 67 → 62 → 58 → 54 is described as having 1 water crossing point, but reference to Figure 4, page 17, indicates two streams to be crossed. The track does have 2 crossings. The risks and potential consequences need to be reassessed accordingly.
- 1.39 This same section of track is accorded a PHRS score of 126. This is based on the average scores for the turbine locations along the route. However, this masks important variation. For example the section of track between turbine locations 62 and 58 has a score of 137. SNH is concerned that this averaging approach can understate the risks associated with specific sections of track and mask the need for specific mitigation measures to reduce the risks. SNH advises that this reassessment of the consequences of variable levels of risk along a track is required to give confidence in the assessment of likely impacts. This is especially important where the potential downhill receptor is the River Spey SAC.
- 1.40 The ES makes reference to reducing the number of new water crossings and the desirability of using existing ones. The ES appears to imply that this poses less of a risk. SNH does not agree with this position. The majority of existing water crossings will require significant 'new work' to bring them up to the standard needed to take the construction traffic. Many of them have no formal structure, so would require just as much construction work as new crossings. In addition to this, SNH is concerned about the implications for increasing the rates of runoff. The existing estate tracks running into these crossings already act as rainfall runoff conduits and in some cases there could be more risk of much greater sediment release into watercourses during work to upgrade them. This could arise from the upgrade of existing tracks and crossings, but could also arise where new tracks traverse old tracks, and runoff from the new tracks could run down the courses of the old ones. In areas to the south of the site, existing tracks are to be used and/or traversed in several locations by new access tracks to turbine locations. SNH advises that further assessment is required of this risk and its potential consequences, especially for the River Spey SAC. It is not currently obvious from the ES that this has been considered.

Appendix 13: Geology and Peat Slide Risk - Peat Slide Hazard and Risk Assessment – Interpretive Report;

- 1.41 Page 28, final sentence. "The slope model for an F value of 1.5 suggests that slopes exceeding 15.5° should be avoided for turbine positions and access road routes".
- 1.42 Whilst it is accepted that an F value of 1.5 is precautionary, it is worth noting that the gradient at turbine location 80 is 16 ° (Table 2 of 'Factual Report' in Appendix 13), and the gradient at turbine location 73 is 15 °. Using the (challenged) PHRS approach of averaging turbine scores to score the intervening track sections, would give a gradient of 15.5 ° for the track.
- 1.43 This is further evidence for concern regarding the potential risk of peat slide on the east side of the proposed development, with consequential implications for the River Spey SAC.
- 1.44 *Photos from site visit (10 August 2008)*
Figures 1 and 2 below show the section of existing access track during an abrupt summer downpour in August. It is acting as a fast-flowing conduit for runoff. It was noted during the rainfall event that the natural streams within the hillside did not increase rapidly in flow, but that most of the existing tracks did act to speed the water quickly down the hillside and into the

main rivers. This occurred even when the tracks had a relatively shallow gradient. There is clearly an impact on habitats adjacent to these tracks where water eventually breaks out onto vegetation or joins with a ford along the track. If traffic were to increase on these tracks it would very quickly destabilise the base and result in heavily discoloured runoff into the streams. Currently, traffic levels are so low, the runoff was relatively clear. The potential for impacts on the River Spey from runoff from a more extensive network of tracks is of high concern and must be assessed more thoroughly.

Figure 3 shows the approximate location of the water crossing and track alignment that is causing us some concern in terms of the amount of excavation and fill that would be required. It is evident that the stream to be crossed is capable of carrying quite significant sizes of bedload (figures 4 and 5) indicating that this is a high energy environment. Tracks within this area will also be subject to extremes of weather, including high runoff events. This is of concern because of the scale and duration of construction in this zone and because this stream runs into the River Spey SAC.

In addition, at this point approximately 120 deer were spotted and there was moderate to heavy grazing and poaching up this little valley. This could be contributing to the risk of peat slide here and may also, unless deer numbers are reduced, cause erosion problems for any tracks constructed in this area. The largest of the peat slides noted throughout the site (PS/4) can be seen higher up the valley and SNH is unconvinced that this is an appropriate area to have a looped track, water crossing and turbine on the flank up to the right of the photo and a further 2 to the left side of the valley.

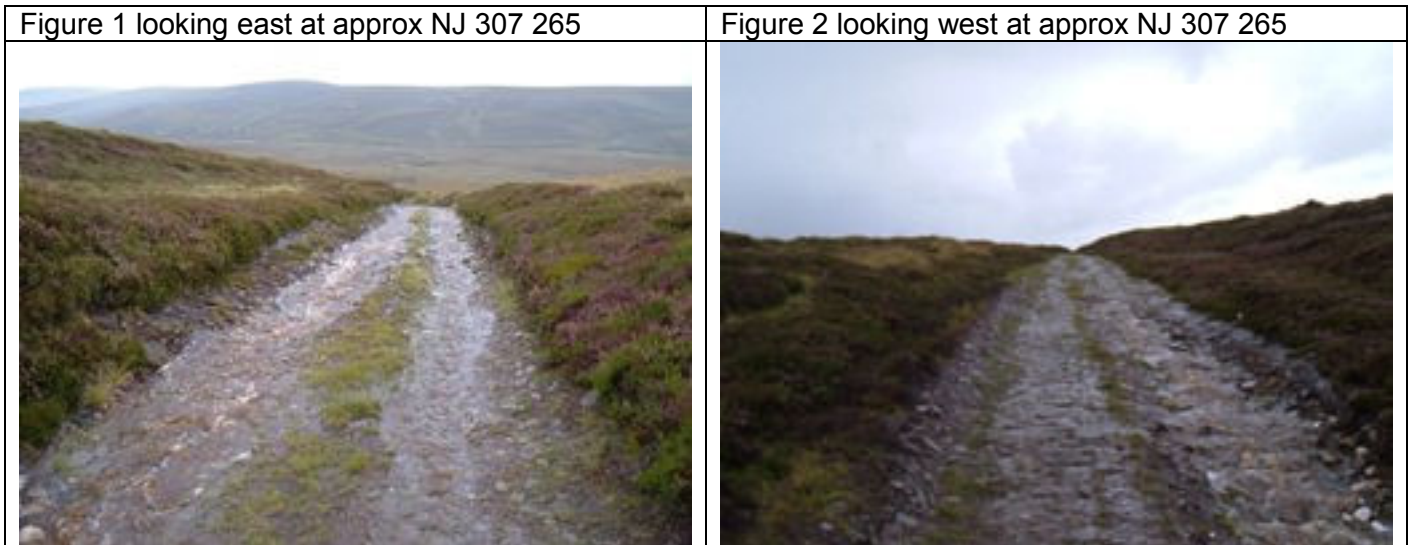




Figure 3 – location of water crossing point between turbines 67 -52



Figure 4 – looking upstream on the Allt a’Chlaiginn approx NJ 320 309
Figure 5 – looking downstream from the same point



Annex 2 - Issues affecting terrestrial ecology

Chapter 11: Terrestrial Ecology;

- 2.1 Page 9, Paragraph 11.30. There is reference here to additional survey work to be “reported at a later stage”. If this survey was considered necessary then surely it should part of the ES. As its stated purpose is to verify and refine earlier results, then in its absence has to be uncertainty regarding the veracity and accuracy of the results currently presented in the ES. SNH advises that it would be useful to be fully informed about the reasons for this March 2008 survey and why the results have yet to be released. Does it contain relevant data that should be considered now and that could help minimise the impacts?
- 2.2 Page 25, Paragraph 11.94. It is not clear why there is reference to Black Hill and Badcheer as these are some distance from the proposed wind farm site. It does however create uncertainty as to whether the general site description applies strictly to the proposed wind farm site or some wider area. Clarification on this point would be helpful.
- 2.3 Page 27, Paragraph 11.104. There is reference to habitat damage on the south face of Cook’s Cairn. Does this perhaps provide an opportunity, through the Habitat Management Plan, to carry out restoration works as part of the compensation measures for habitat loss and damage elsewhere?
- 2.4 Page 28, Paragraph 11.105. No consideration seems to have been given as to whether the boulder scree on the site is referable to either one of the Habitats Directive Annex 1 scree habitats or the UKBAP priority habitat ‘inland rock outcrop and scree’. Can this omission be addressed? There is currently insufficient information within the ES to allow SNH to give any advice on this.
- 2.5 Page 29, Paragraph 11.110. Again, reference to Badcheer which is outwith the site.
- 2.6 Page 34, Paragraph 11.126. Given the occurrence of a limestone geology, and that stands of *Saxifraga hirculus* occur within predominantly blanket bog habitat elsewhere, the reasoning that no suitable habitat exists at Dorenell does not seem very strong. Because this species is an European Protected Species, a level of detail must be provided, prior to any decision being taken, that will enable the decision maker to conclude that EPS will not be adversely affected by the proposal. At present, the evidence to support the conclusion that the species is unlikely to be present is not clear. Can further detail be provided to enable a better confidence in this conclusion? SNH will reconsider its position and advice on EPS once further detail is provided.
- 2.7 Page 52, Paragraph 11.217. It is assumed here that a 10m wide corridor might be disturbed for track construction. However it is clear from the Track Designs at Figure 7.9 that the disturbed area could be wider than this. Also, Paragraphs 8.40 and 8.45 (Chapter 8 – Construction Methods) identify a 15 – 20m construction corridor. While all of the 15-20 metres may not actually be physically disturbed, it should be assumed that there is potential for it to be disturbed because the purpose of ‘a corridor’ is to contain disturbance within it. The ES may therefore be significantly under-estimating the potential area of habitat disturbance and any knock-on effects this may have for drainage that could affect watercourses.
- 2.8 Page 52, Paragraph 11.219. It is stated that after construction the 25m x 75m hardstanding at each turbine will be re-instated and a circular footprint of about 50m diameter created. A 50m diameter circle has a greater surface area than a rectangle 25m x 75m. The proposal is thus to increase the area of habitat loss as part of the re-instatement process. This is presumably an error, but clarification would be helpful.

- 2.9 Pages 53 & 54, Table 11.10. It is curious that no totals are included in this table to illustrate total habitat losses. It is also unclear why the substation has been omitted from the calculations. Have losses to habitat for cable trenches been considered? The loss of habitat required to implement successful drainage measures should be included in this. It is disappointing that no attempt has been made to quantify indirect habitat losses. Indirect losses are partly addressed in discussing 'Changes to hydrology' (Paragraphs 11.230 – 11.235, but only in a very general way. The losses identified here thus under-represent the total habitat losses associated with this proposed development.
- 2.10 Page 69, Paragraph 11.284. "Suitable stone for track building will be won on site. Providing that the stone used in track construction is hard wearing and inert the risk of significant impacts.....will be reduced". Stone which is not hard wearing and inert is clearly not "suitable" and should not be used. That there is no mention here of the proposed stone being limestone is a cause for concern. Can this be clarified?

Appendix 11: Terrestrial Ecology;

- 2.11 Appendix 11D, Table 1 includes records for *Dryas octopetala* and *Salix lanata*. Given the relative rarity of these species it seemed odd that they were not referred to in either the Target Notes or the text of Terrestrial Ecology Chapter. Reference to the National Biodiversity Network (NBN) indicates that these species have not been noted in this area previously. If these species do indeed occur on the site then this will be an extension of their known range in the UK and thus of some considerable importance. Site infrastructure should be designed so that specimens and the habitats supporting them are left undisturbed. Can it be confirmed that this has/or can be taken into consideration?

Annex - 3. Ornithology – Potential Impacts on Protected Species

Chapter 10; Collision risk assessment (CRA);

- 3.1 An annual prediction of mortality has been made using data that predict a mortality rate of 0.05 per 128 days during the breeding season. SNH have doubts about the collection of data over that period. A collision mortality rate of 0.05 equates to 1.25 eagles over the lifetime of the wind farm but only for the period 12 April – 17 August for each of those years. There has been no assessment for the remaining 237 days per annum. It is important that the use of the site during this non-breeding period is surveyed and assessed to get an indication of the use for a whole year, covering both the breeding and non breeding periods. The data for the whole year should then be used to calculate the CRA. Can justification/clarification be provided for not including non-breeding season activity in the current CRA? Was this period actually surveyed? **In SNH's opinion, the omission of survey data for the non-breeding period is a fundamental error in assessing the potential impact upon bird populations**
- 3.2 Other aspects of the survey work also appear to fail to follow SNH's guidance ("*Survey methods for use in assessing the impacts of onshore wind farms on bird communities*" (http://www.snh.org.uk/pdfs/strategy/renewable/bird_survey.pdf) including the temporal spread of observations during the breeding season. SNH requests clarification of the approach taken. If a reason for not carrying out year round flight activity can be robustly defended, SNH is prepared to reconsider its opinion of the implications of this omission.

3.3 SNH has not had the resources to verify that all the observational data used to populate the collision models are correct. SNH has concerns over the following aspects of the CRA in addition to those above:

- Golden eagle flight speed has been quoted as 20m/s (45mph). The draft report by Provan & Whitfield (2006)¹ recommends a mean speed of 15m/s would be appropriate for golden eagle within a collision risk model. Can the effect on the CRA result of using the faster speed be described?
- The footnote iii for Table 10.E.3, calculating the proportion of rotor swept area from recording height band, contains a minor error. If the rotor diameter is 90m (as stated in Table 10.E.2) then the proportion of the recorded height band containing the rotor swept area equals $90/(130-10)*100 = 0.75$, not 0.683 as stated. This will affect the results of the CRA slightly and should be corrected.
- The models presented within the ES adjusts the number of transits through the rotors by applying a 15% down-time factor. We would suggest using 100% operation time, presenting a worst-case.
- Despite the absence of data for the non breeding season, the collision mortality estimates contained within the ES present a per annum collision mortality estimate. As noted above, due to seasonal variation in bird activity, the results of activity during the breeding season cannot be extrapolated over a full year per annum.

3.4 It is worth pointing out that for golden eagle and hen harrier SNH have accepted avoidance rates of 98% and 99% respectively. For all other species highlighted within Table 10. E.4 SNH adopt a precautionary rate of 95% avoidance.

Survey effort;

3.5 Para 10.3 – if the summary in this paragraph is accurate then the survey period (April – August 2006) is inadequate. This comment also pertains to paras 10.29, 10.52 – 10.54 & 10.60. Can this approach be justified?

3.6 Observations appear to start mid – April (12 April) potentially missing crucial hen harrier and golden plover display flights etc. SNH guidance suggests that surveys of breeding activity should be from the start of March for golden plover and from mid – March for hen harrier. Can justification for excluding these times be provided?

3.7 Regular observations appear to end on 20 July 2006, with a single follow up survey on 17 August 2006 from VP3 for 4hrs (longer than recommended), a gap of 4 weeks. This does not really provide sufficient temporal spread of observation to provide a representative sample of bird activity over the period 20 July – end August. Can justification be provided for this approach?

3.8 There is one observation start time at 0740hrs and one at 0900hrs. Other than these, observations do not generally start earlier than 0945hrs. Observations do not finish later than 1840hrs. Given that dawn can be around 0330/0400hrs and dusk 2200/2230hrs during the summer months, there have been no vantage point watches undertaken during the early morning

¹ S., Provan & D. P., Whitfield. 2006. Avian Flight Speeds and Biometrics For Use in Collision Risk Modelling. Draft Report to SNH from Natural Research (Projects) Ltd.

or the late evening (when birds may be most active) at key periods of the breeding season. This is particularly important for all breeding species, particularly for golden plover that commute between breeding locations and foraging locations at these times of day. Again, can justification be provided for selecting these times and omitting earlier and later watches?

- 3.9 Standard VP methodology is not suitable for merlin, due to their small size, cryptic colouration and speed. An adapted methodology should have been adopted, but reference to this does not appear within the ES. Therefore conclusions on the impacts upon merlin are not well supported.
- 3.10 Figure 10.3b / para 10.13 – the ‘Breeding Birds Survey Area’ as per figure 10.3b does not extend beyond the site boundary. Furthermore, it does not include the most south-eastern turbine location. The background to this is explained in para 10.13 in which it is proposed that breeding bird surveys will be performed in 2008 as part of repeat surveys. Two points to note: (i) logically, these won’t be repeat surveys in this particular area as they weren’t done before; (ii) it is important that these surveys take account of the comments made on the 2006 surveys otherwise the issues of concern may not be addressed. SNH will be happy to provide further advice replicated.
- 3.11 Para 10.20 (p. 6). The moorland breeding bird survey method as described in this paragraph (3 visits carried out in May, June, July) does not follow the SNH 2005 guidance for breeding upland/peatland waders. This is also at odds with what is reported to have been carried out within appendix 10A section 1.2. Can details of the actual dates be clarified?
- 3.12 Para 10.23 suggests that the woodland breeding bird survey method did not follow the SNH 2005 guidance for woodland species (paras 80 – 89 and 84 in particular). Further, Fig 10.3a shows areas of forestry with no bird records (albeit relatively small areas) which may reflect lack of coverage due to the method used rather than an absence of birds. Can further clarification of this be provided?
- 3.13 Para 10.25 says that flight activity surveys were undertaken from vantage points April – August 2006 and September 2007 – April 2008, i.e. all the months in the calendar year have been covered but not in the same year. This is a significant weakness, and does not follow SNH 2005 guidance. Again, this makes the statements in paras 10.52 – 10.54 & 10.60 questionable.
- 3.14 Paras 10.107 – 10.110 (pp. 26-27) gives a summary of breeding bird survey results for golden plover. The comments do not appear to highlight whether or not birds fly through the proposed turbine area to and from feeding grounds. This lack of observation, combined with the methodological weakness described in paragraph 3.8 of this annex above brings into question the validity of the conclusions reached within the ES on collision risks. We would request further justification of the survey method and resulting collision risk assessment. Given the relatively high number of birds and flight activity recorded SNH would expect consideration of collision risk, disturbance, displacement and cumulative impact within the relevant Natural Heritage Zone (NHZ) as a whole. The best available info on golden plovers, windfarms & NHZs is currently available at http://www.mires-and-peat.net/map04/map_04_01.pdf
- 3.15 Para 10.156 refers to ongoing migratory wildfowl surveys. Please ensure any surveys do follow the SNH 2005 guidance or, if they do differ from our guidance, please ensure that a clear explanation of the alternative methodology and why it is an adequate alternative is provided.

Annex - 4. Landscape and visual

- 4.1 SNH considers that, in landscape and visual terms, the site at Dorenell has the potential to accommodate a wind farm, provided it was of an appropriate size and design. The relatively large scale landscape and overall simple landform, as viewed from some distance, are characteristics to which a wind farm could relate. The site is located in Zone 2 of SNH's Strategic Locational Guidance meaning that the area has been zoned as having medium natural heritage sensitivity to wind farm development. In this zone, while there may be localised interests of high sensitivity, with careful selection of location there is often scope to accommodate development of an appropriate scale, siting and design (again having regard to cumulative effects) in a way which is acceptable in natural heritage terms.
- 4.2 SNH is concerned that the currently proposed wind farm is not suitably designed for this sensitive location, largely on account of its scale and dominance along the two sides of an elongated rounded hill range/ridge. The area is designated as an Area of Great Landscape Value, it is near the Cairngorms National Park; there are several sensitive viewpoints nearby, notably Ben Rinnes. The site also has some steep slopes that could make it difficult to locate turbines and tracks without high landscape and visual impacts, because light-coloured turbines and linear tracks are likely to have the predominantly dark hillsides as a backdrop as opposed to a pale sky.
- 4.3 SNH is particularly concerned about impacts on views from Ben Rinnes (viewpoint 18) and the A941 road (viewpoint 3). Other important viewpoints include Morven (viewpoint 10), the A941 westbound (viewpoint 9), and Little Geal Carn (viewpoint 11)
- 4.4 Although the wind farm would be visible for only a short section of the A941 eastbound, the way the view opens up near viewpoint 3 means the wind farm would make a striking impact that would be worse if turbines appear cluttered, overlap greatly, or dominate the landform. Ben Rinnes (viewpoint 18) is sensitive due to its popularity as a hill walk with locals and visitors and because of cumulative impacts (2 other large wind farms (Cairn Uish and Paul's Hill) and potentially 4 more could be viewed from the summit in the future (Drummuir, Aultmore, Berry Burn and Kildrummy). The proximity of Dorenell, its visibility from the main Ben Rinnes path, and the way the turbines would be viewed against landform as well as the skyline, all contribute to the need to improve the design and layout of the wind farm from this viewpoint. As discussed at the meeting on 07 August 2008 with Infinergy and their consultants, removing turbines, not just relocating them, would be needed to achieve this.
- 4.5 SNH is also concerned about likely impacts on viewpoint 11 - *Little Geal Carn* in the Ladderhills and within the Cairngorms National Park, however, **SNH will not be making any comments specific to the proposal's potential landscape and visual impact on the Cairngorms National Park designation as our understanding is that the Cairngorm National Park Authority (CNPA) have visited the viewpoint and may provide their own comments.**
- 4.6 The impacts on viewpoint 9, the A941 (westbound at Upper Howbog) could be reduced if the three turbines on the right hand side of the layout were removed. We understand from the visualisation software presentation at the above meeting, that removing these turbines may also ameliorate impacts from viewpoint 3 and elsewhere.
- 4.7 We consider that it may be possible to improve the appearance of the wind farm from viewpoints 3 and 18 by amending the layout subject to the other site constraints.
- 4.8 If amendments can be made that reduce visual impacts and remove risks to the River Spey SAC's interests, then this would go a significant way to addressing SNH's concerns. SNH

would wish to be consulted, along with Moray Council / CNPA on any amended layouts, as the effects of changes on various natural heritage interests would need to be assessed, and some may take precedence over others.

- 4.9 SNH would consider the need to design the proposed wind farm prevent an adverse effect on the interests of the River Spey SAC to be more important than minimising the visual impacts in this case. It would, however, be highly desirable to achieve both.

Annex 5 – Legislative requirements

Natura 2000 sites

The River Spey's status as a SAC under the EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna (the "Habitats Directive") means that the Conservation (Natural Habitats, &c.) Regulations 1994 as amended, (the "Habitats Regulations") apply. The requirements are summarised in Circular 6/1995 as amended June 2000 and include, at paragraph 12,

"The Regulations (48) require that, where an authority concludes that a development proposal unconnected with the nature conservation management of a Natura 2000 site is likely to have a significant effect on that site, it must undertake an appropriate assessment of the implications for the conservation interests for which the area has been designated."

The need for appropriate assessment extends to plans or projects outwith the boundary of the site in order to determine their implications for the interest protected within the site.

Under regulation 48 of the Habitats Regulations, this means that Scottish Government, as competent authority, has a duty to:

- determine whether the proposal is directly connected with or necessary to site management for conservation; and, if not,
- determine whether the proposal is likely to have a significant effect on the site either individually or in combination with other plans or projects; and, if so, then
- make an appropriate assessment of the implications (of the proposal) for the site in view of that site's conservation objectives.

The competent authority can only agree to the proposal under regulation 48 after having ascertained that it will not adversely affect the integrity of the site. If this is not the case, and there are no alternative solutions, the proposal can only be allowed to proceed if there are imperative reasons of overriding public interest, which in this case can include those of a social or economic nature.

European Protected Species (EPS)

Regulations 39 and 43 of The Conservation (Natural Habitats &c.) Regulations 1994 (as amended) (Habitats Regulations) provide full protection for certain animal and plant species. The species identified above are referred to as European protected species and are listed on Schedules 2 (animals) and 4 (plants) of the Habitats Regulations.

This means it is illegal to:

- Deliberately or recklessly capture, injure or kill a European protected species of wild animal or to deliberately or recklessly (i) harass an animal or group of animals; (ii) disturb an animal while it's occupying a structure or place used for shelter or protection; (iii) disturb an animal while it's rearing or otherwise caring for its young; (iv) obstruct access to a breeding site or resting place, or otherwise deny the animal use of the breeding site or resting place; (v) disturb an animal in a manner that is, or in circumstances which are, likely to significantly affect the local distribution or abundance of the species to which it belongs; (vi) disturb an animal in a manner that is, or in circumstances which are, likely to impair its ability to survive, breed or reproduce, or rear or otherwise care for its young
- Deliberately or recklessly take or destroy its egg
- Deliberately or recklessly disturb any cetacean
- Damage or destroy the breeding sites or resting places of such animals
- Deliberately or recklessly pick, collect, cut, uproot or destroy European protected species of wild plant

Where it is proposed to carry out works which will affect European protected species or their shelter/breeding places, whether or not they are present in these refuges, a licence is required from the licensing authority (in this case likely to be Scottish Government). It is strongly advised that you refer to the Scottish Government information on the current interim licensing arrangements, which can be found in the document *European Protected Species, Development Sites and the Planning System: Interim Guidance for Local Authorities on Licensing Arrangements*, (October 2001) before applying for a licence. Copies of this are available at <http://www.scotland.gov.uk/library3/environment/epsq-00.asp> or by writing to the Landscapes and Habitats Division, Scottish Government Rural Directorate, Room GH 93, Victoria Quay, Edinburgh EH6 6QQ or by telephoning 0131 244 7140.

As highlighted in the Interim Guidance, three tests must be satisfied before the licensing authority can issue a licence under Regulation 44(2) of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended) to permit otherwise prohibited acts. An application for a licence will fail unless all of the three tests are satisfied. The three tests involve the following considerations:

- Test 1 - The licence application must demonstrably relate to one of the purposes specified in Regulation 44(2) (as amended). For development proposals, the relevant purpose is likely to be Regulation 44(2)(e) for which Scottish Government is currently the licensing authority. This regulation states that licences may be granted by Scottish Government only for the purpose of *“preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.”*
- Test 2 - Regulation 44(3)(a) states that a licence may not be granted unless Scottish Government is satisfied *“that there is no satisfactory alternative”*.
- Test 3 - Regulation 44(3)(b) states that a licence cannot be issued unless Scottish Government is satisfied that the action proposed *“will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”* (Scottish Government will, however, seek the expert advice of Scottish Natural Heritage on this matter).

Consideration of European protected species must be included as part of the planning application process, not as an issue to be dealt with at a later stage. Any planning consent given without due consideration to these species is likely to breach European Directives with the possibility of consequential delays or the project being halted by the EC, as has happened previously.