



ENVIRONMENT AND PROTECTIVE SERVICES COMMITTEE: 21 APRIL 2009

## AMENDMENT TO PAIRC WINDFARM, ISLE OF LEWIS

Report by Director of Development

**PURPOSE OF REPORT** To determine the view of the Comhairle as '*principal consultee*' in respect of a consultation from the Scottish Government regarding amended plans for Pairc Windfarm, an application for consent under Section 36 of the 1989 Electricity Act.

### COMPETENCE

- 1.1 There are no legal, financial or other constraints to the recommendations being implemented.

### SUMMARY

- 2.1 The Scottish Ministers have asked for the view of the Comhairle on an addendum to proposals to develop a large scale windfarm on Lewis by Scottish and Southern Energy, a project that was first considered by the Comhairle in December 2007. The Comhairle was given until 16 March 2009 to submit its comments. This period has been extended to 1 May 2009 to enable consideration by Committee on 21 April and the Comhairle on 30 April 2009.
- 2.2 The report details the amended proposals, comments received on them, provides an evaluation against the Comhairle's agreed position, and offers conclusions and a recommended view to be submitted to Scottish Ministers. Copies of the Non-Technical Summary that show the amended layout will be made available in the Member's lounge.

### RECOMMENDATION

- 3.1 **It is recommended that the:**
- a) **Comhairle be of the view that Scottish Ministers approve the Pairc Windfarm application under Section 36 of the Electricity Act 1989, subject to all of the terms and planning conditions detailed at Appendix 7 of this Report;**
  - b) **Chief Executive be authorised to enter into negotiations with Scottish and Southern Energy plc and other relevant land interests to prepare a Section 75 Planning Agreement, on such terms as outlined in Appendix 7 of this Report;**
  - c) **Director of Development be authorised, subject to the application being approved, to amend the terms and planning conditions shown in Appendix 7 in light of comments made by any statutory consultee which were not available at the time of writing this report; and**
  - d) **the Comhairle informs Scottish Ministers that it is of the view that there is no public interest in holding a Public Local Inquiry for the Pairc Windfarm proposal.**

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Appendix

- 1 Proposed Terms and Conditions - December 2007
- 2 Site Layout
- 3 SNH Comments
- 4 Environmental Health Comments - 2007
- 5 Technical Services Comments - 2007
- 6 Economic Development Comments
- 7 Proposed Terms and Conditions - April 2009

Background Papers: None

## REPORT DETAILS

### BACKGROUND

- 4.1 An application was lodged by Scottish and Southern Energy plc with the Scottish Government on 1 June 2007 for a windfarm, with 57 turbines sited in the Pairc area of South Lochs, Isle of Lewis. In December 2007 the Comhairle decision was to support the scheme subject to significant modifications and to the terms and conditions as detailed in Appendix 1 to this report.
- 4.2 The Applicant has revised the proposed windfarm to reduce the number of turbines and to recognise objections and comments raised by a number of bodies, notably the Comhairle in respect of the visual impact of the turbines, Scottish Natural Heritage in respect of birds, peatlands, freshwater and the landscape impact of certain turbines. RSPB also recorded an objection in respect of birds, and Historic Scotland, the Outer Hebrides Fisheries Trust, and SEPA raised other concerns.
- 4.3 In order to properly consider all relevant matters this report is structured as follows:
- Section 4 Background;
  - Section 5 Outline of main changes from original proposal;
  - Section 6 External consultation responses;
  - Section 7 Summary of internal consultation responses;
  - Section 8 Representations;
  - Section 9 Comments from applicant;
  - Section 10 Policy context;
  - Section 11 Evaluation of changes against Comhairle position;
  - Section 12 Terms and conditions;
  - Section 13 Section 75; and
  - Section 14 Discussion and Conclusions.

### OUTLINE OF THE MAIN CHANGES FROM ORIGINAL PROPOSAL

- 5.1 It is proposed to construct 26 turbines (and associated infrastructure) on the Pairc peninsula in the South Lochs area of the Isle of Lewis. The site is located approximately 15km south from the town of Stornoway on a peninsula that extends roughly 12km inland and lies between the sea lochs of Loch Eireasort to the north and Loch Sealg to the south. The site occupies a hilly moor and loch environment of approximately 5,600 hectares (56km<sup>2</sup>).
- 5.2 The table below summarises the main elements of the development as proposed in 2007 and as amended in 2009. Appendix 2 (Fig 2.1 of the ES) shows the revised layout.
- 5.3 The number of turbines is reduced from 57 to 26 but the turbine dimensions and generating capacity remain the same. All of the 26 retained turbines are at the locations proposed in the original scheme. In addition to the change in length of the track, there are also some variations in the track layout as a result of ecological concerns expressed and further peat investigations.
- 5.4 The proposed location and design of the control and substation buildings is unchanged and would accommodate up to two transformers. The number of anemometers would remain at three but two will be at new locations. The new information from the developer states that the construction process and activities as are described in the original ES.

<b>Scheme proposed in 2007</b>	<b>Amended Scheme 2009</b>
installed capacity of 205 MW	installed capacity 94MW
57 wind turbines (tip height 145m); each with a reinforced concrete foundation (22m <sup>2</sup> ), a crane hard standing (18m by 40m), and an internal or external transformer	26 wind turbines (tip height 145m); each with a reinforced concrete foundation (22m <sup>2</sup> ), a crane hard standing (18m by 40m), and an internal or external transformer

main control building with an adjacent sub-station	as proposed in 2007
temporary construction compound, to include a laydown area of approx 100m	a single combined compound and lay down area is proposed
two additional laydown areas of approx 100m <sup>2</sup> .	not included
45km of access roads and 40km of underground connecting cables	20 km of access roads and 18km of underground connecting cables
permanent (90m high) wind monitoring masts, plus temporary masts at selected sites	3 permanent (90m high) wind monitoring masts but location of 2 has changed
9 borrow pits (quarries) and 3 road-side sources for rock extraction (approx 400,000m <sup>3</sup> ).	6 borrow pits for extraction of 350,000m <sup>3</sup>
minor modifications to public roads to accommodate site access	minor modifications to public roads to accommodate site access

## SUMMARY OF EXTERNAL CONSULTATION RESPONSES

### DIRECTORATE OF AIRSPACE POLICY CAA

6.1 *'There appears to be the potential for the development to impact on the operations at Stornoway airport, any concerns from HIAL will need to be appropriately considered. We have previously highlighted several more generic issues, notably, aviation promulgation and potential lighting requirements. The Ministry of Defence and NATS should be engaged in the consultation process.'*

6.2 *'An anticipated amendment to international aviation regulatory documentation will require that the rotor blades, nacelle and upper 2/3 of the supporting mast of turbines deemed to be an aviation obstruction should be painted white.'*

6.3 *'It would be sensible to establish the related view point of local emergency services air support units.'*

### DEFENCE ESTATES (MOD)

6.4 *'No objection. in the interests of air safety the perimeter/corner turbines and a selection of inner turbines are lit with 25 candela omni-directional red lighting at the highest practical point.'*

### NATS

6.5 *'NATS (en Route) Plc has no safeguarding objection to the proposal.'*

### HSE

6.6 *'HSE has no comments on this environmental statement.'*

### THE CROWN ESTATE

6.7 *'We have no comment to make.'*

### MOUNTAINEERING COUNCIL FOR SCOTLAND

6.8 *'The Mountaineering Council for Scotland is not intending to make a response to this proposal.'*

### CSS SPECTRUM MANAGEMENT SERVICES

6.9 *'In relation to UHF Radio Scanning Telemetry communications used by our client in that region there are no objections.'*

### SCOTTISH WATER

6.10 *'No objection.'*

### OFGEM

6.11 *'OFGEM has no role in the planning process and does not comment on planning applications.'*

## **HIAL**

- 6.12 *'The Environmental Statement dated January 2009 would appear to have addressed any concerns HIA may have had regarding the original (and larger) proposal for this development. The only issue would be to remind the developer of their responsibility to undertake any related consultation, with the Civil Aviation Authority, on lighting the turbines.'*

## **OUTER HEBRIDES FISHERIES TRUST**

- 6.13 *'Both the Outer Hebrides Fisheries Trust and the Western Isles Salmon Fisheries Board object to the Pairc Windfarm proposal, primarily because the development is close to numerous sensitive watercourses. The terrain and climate mean that despite the proposed mitigation this development is likely to cause significant, long-term harm to populations of migratory and resident fish. The amenity value of these fisheries will also be reduced. Reasons for our objection are explained below.'*

- *The revised development area still comprises a significant amount of standing water and watercourses with good water quality. These freshwaters have not been extensively surveyed; and*
- *Two species, present, Atlantic salmon and sea trout (migratory trout) are protected under various aspects of legislation.'*

### **Impacts on fish populations**

#### **Construction Phase**

- *During the construction phase of the development there is the potential for large volumes of silt and sediment to become suspended in freshwater;*
- *Despite the proposed mitigation measures widespread pollution of watercourses with suspended sediment is inevitable, and impacts are likely to have long-term impacts on fish populations;*
- *Local experience leads the Outer Hebrides Fisheries Trust to request that a minimum separation distance of 200m between turbine bases, tracks (apart from water crossings), borrow pits, concrete batching plants, drainage ditch, discharge sites, and excavated material and the nearest watercourse be set as a planning condition; and*
- *Where a 200m separation distance is not possible, construction should be avoided.*

#### **Peatslide**

- *As detailed in the further information, there is a need for ongoing re-appraisal of the peat landslide risk assessment throughout the detailed design and construction stages. The trust would also recommend that emergency procedures for the detection and management of any peat landslides should be carefully considered with regard to freshwater habitats and species; and*
- *Where peat slides have occurred naturally in Lewis they have introduced significant amounts of material into watercourses reducing water quality and obstructing fish migration. Even small slides can have significant long-term impacts on fish populations.*

#### **Water Crossings**

- *The reduced proposal of 20km of new access track and 41 water crossings will disturb fish and reduce in stream habitat and food and shelter provided by vegetation on river banks;*
- *Crossings have been well examined in the Environmental Statement and further information with good provision for fish migration, but assumptions about fish provision must be backed up by thorough freshwater surveys;*
- *The use of temporary watercourse crossings should be minimised, located carefully and should be designed and monitored to minimise siltation of the watercourse;*

- *Rectangular culverts should not be used where juvenile salmonids are present, half moon culverts, where the natural streambed is not disturbed, should be used to minimise habitat disturbance, fish displacement and problems caused by temporarily diverting water courses;*
- *It is imperative that any exposed soils near water crossings are prioritised for re-vegetation.*

### **Hydrology of Rivers**

- *Drainage and cumulative changes in land use from this development will alter hydrological conditions, further disrupting fish populations.*

### **The Importance of Pairc for Local Anglers and Tourists**

- *Neither the ES nor further information consider the importance of angling and tourism;*
- *Pairc is renowned for its wild trout and salmon fishing;*
- *Visiting anglers aid the local economy;*
- *The quality of the environment and its tranquil nature will be severely affected by the proposed development, during the construction and operational phase and potentially long after the site is decommissioned. The economic impacts must be considered when determining if the Pairc Windfarm should be approved.*

### **Environmental Statement**

#### **Fish Survey**

- *The developer has made no attempt to specifically assess local fish populations of the quantitative impacts of the development on fish populations, although a freshwater pearl mussel survey has been conducted;*
- *The lack of information on freshwater species and their habitats is unacceptable;*
- *A thorough pre-scheme assessment of local fish habitats and populations must be carried out by the developer. This would allow planners to assess the impacts of the development on fish populations and the developers to minimise impacts where possible.*

#### **Fish Ecology**

- *It is important that the impacts of the development on all life stages of salmonids in all of the potentially impacted watercourses are considered.*

#### **Duration of impacts**

- *Siltation of spawning beds has long term consequences for aquatic life including fish;*
- *Disturbance including blasting, plant movement and siltation will also occur over a number of years with direct, cumulative effects on fish populations.*

#### **Hydrology**

- *Further information give suggested mitigation for effects on the hydrology of the site. Details regarding both the proposed mitigation methods and location of this mitigation should be given prior to planning consent.*

#### **Timing**

- *Careful timing of works is vital to minimise damage to fish populations. It is important that timings of work are clearly set out at the planning stage.*

#### **Cumulative Impacts**

- *The ES must address the cumulative impacts of Pairc windfarm on fish populations and fishing amenity.*

### **Drainage**

- *The ES should describe an integrated drainage plan for the whole development, showing how siltation, erosion and peatslides would be avoided while maintaining water flow within catchments.*

### **Construction Phases**

#### **Blasting Work**

- *The effects of blasting work on fish should be assessed in the ES*

#### **Concrete Batching Plants**

- *We request that batching plants should be located 200m away from a watercourse;*
- *Pollution prevention methods should be provided.*

#### **Storage and Management of Excavated Material**

- *Detailed plans for the storage and management of all excavated material must be provided prior to planning consent to ensure that watercourses are not polluted;*
- *Storage of excavated material on slopes is not appropriate;*
- *Where excavated peat is used, proven methods for rapidly stabilising the peat should be employed.*

#### **Restoration**

- *The ES should consider watercourse of riparian habitat enhancement.*

#### **Angling**

- *The impacts of this development on resident and visiting anglers has not been addressed by the ES or further information.*

#### **Summary**

- *Without a thorough pre-scheme assessment of fish habitats and populations for the entire development site many of the assumptions made in the ES cannot be justified.*

### **HALCROW GROUP LIMITED**

6.14 *'The Energy Consents Unit has commissioned Halcrow to technically assess the Peat Stability Report(s) submitted by developers. The assessment report considers whether or not adequate and appropriate field survey, peat sampling and analytical methods have been employed to provide a sound basis for assessing peat stability and the risk of peat landslides within the development envelope.*

6.15 *This revised Peat Landslide Risk Assessment provides an assessment and recommendations on the Peat Stability Assessment contained within the resubmitted Environmental Statement.'*

### **Conclusions**

6.16 *'It is considered that the report adequately assesses the risk peat landslides at this site and largely follows the Best Practice Guide with any deviations from this detailed at some length. Given the presented evidence, we can broadly agree with the assessed peat landslide risk will be reduced to insignificant, if appropriate mitigation measures are considered.*

6.17 *Given the site topography and the findings that the majority of the site is underlain by peat less than 1.50 metres deep with pockets of deeper peat present over relatively short distances, there is still the possibility that conditions are present that could prove susceptible to peat sliding.'*

### **Recommendations**

6.18 *'More detailed evidence from the site reconnaissance should be provided. Annotated geomorphological maps would benefit from the inclusion of more site specific peat features that have been identified and assessed, such as 'quaking peat'. This would allow the specific assessments to be better understood within the global context.*

- 6.19 *Consideration should be given to the revision of the scale at which the peat depths have been graphically presented.*
- 6.20 *Specific details of the borrow pits, river crossings and drainage design need to be incorporated into the peat stability assessment as the design progresses. An undertaking should be given to carry out further investigation and assess peat landslide risk at these locations as appropriate.'*

#### **FISHERIES RESEARCH SERVICES**

- 6.21 *'The comments made in the initial ES are still valid and it appears that the developer has not taken these points on board. I therefore include below copies of my initial comments that should be fully addressed as well as some additional points.*
- 6.22 *It is not acceptable to base mitigation strategies for fish/fisheries in the subjective observation of suitable habitat and the observation of fish that may or may not be trout. Mitigation strategies can only be properly constructed when there is an accurate assessment of which species are present.*
- 6.23 *Environmental effects of windfarm construction can include increased sediment load and changes to hydrological pathways.*
- 6.24 *This would indicate an already poor situation could be made significantly worse by the development without targeted mitigation.*
- 6.25 *There needs to be more thought given to likely stream habitat changes and their effect on the fish present in these water courses.*
- 6.26 *In summary although the developer has identified possible areas of concern in terms of fisheries and suggested appropriate mitigation strategies he has failed to include quantitative and qualitative monitoring on which to base mitigation decision and target these appropriately. Additionally and more importantly he has failed to identify quantitative and qualitative monitoring, as suggested above, which could be used to identify changes to fish populations due to the development. Early detection of a problem means that corrective action can be taken earlier and the overall impact reduced. This development will not be straightforward from the environmental point of view as water bodies, which frequently contain fish or fisheries, cover 10% of the site.'*

#### **SNH**

- 6.27 *The full response from SNH is provided at Appendix 3 to this Report. The main points are summarised below:*

##### **Lewis Peatlands SPA and Ramsar site**

- 6.28 *The qualifying species for the Lewis Peatlands SPA are: golden eagle, merlin, red-throated diver, black-throated diver, golden plover, dunlin and greenshank.*
- 6.29 *It appears to SNH that in this case the proposal is not connected with or necessary for the conservation management of the SPA. Hence, further consideration is required.*
- 6.30 *There is not likely to be a significant effect upon the SPAs designated for golden eagle in Lewis and Harris from this windfarm wither alone, or in combination with other relevant windfarms, so that an appropriate assessment of the implications for the Lewis Peatlands SPAs conservation objectives is not required.*

##### **North Harris Mountains SPA**

- 6.31 *The qualifying species for the North Harris Mountains SPA is golden eagle.*
- 6.32 *There is not likely to be a significant effect upon the SPAs designated for golden eagle in Lewis and Harris from this windfarm either alone, or in combination with other relevant windfarms, so that an appropriate assessment of the implications for the North Harris Mountains SPAs conservation objectives is not required.*

### **SNH's Advice in Relation to Protected Birds**

- 6.33 SNH cannot be confident that impacts upon this species will be of low significant, as claimed in the ES. SNH therefore reserves our position in relation to the impacts of this proposal upon white-tailed eagles.
- 6.34 SNH therefore considers that the impacts upon the Western Isles golden eagle population, while of a significant magnitude, will not cause the population to decline into unfavourable conservation status.
- 6.35 SNH reserves its position regarding these species pending information being provided which gives greater confidence regarding the degree and significance of impacts on their NHZ populations.

### **SNH's advice in Relation to European Protected Species (EPS) – Otter**

- 6.36 The ESFI makes no reference to impacts upon otters.
- 6.37 SNH objects on grounds of impacts on otter, unless the following measures are incorporated into conditions of a consent:
- The appropriate licensing procedures are followed where it is considered necessary to work in the vicinity of a holt or resting place;
  - Measures specified on the ES to mitigate impacts on otters are implemented;
  - Mitigation measures for otter are implemented on additional watercourses specified by SNH in Annex 6 of our response of 27 August 2007, insofar as these sites continue to feature in the revised layout; and
  - Appointment of an on-site ecologist, such appointment, duration and terms to be approved in advance by SNH.

### **SNH's Advice in Relation to Designated Landscapes**

- 6.38 *This windfarm would still result in some significant adverse landscape and visual impacts. However clear improvements have been made.*

### **Advice in relation to Peatland**

- 6.39 SNH does not object to the proposed development on account of the impacts upon blanket bog, a priority habitat listed on Annex 1 of the Habitats Directive. SNH recommends that the following are incorporated as conditions of any consent:
- Agreed Construction Methods Statements;
  - The development of an agreed Habitat Management Plan;
  - The development of an agreed Peat Management Plan;
  - Employment of a Geo-technical Engineer;
  - Employment of an Ecological Clerk of Works.

6.40 SNH has no objection to the proposal due to impacts upon freshwater interests.

6.41 SNH does not object to the proposal in relation to its impacts upon recreation and access.'

### **RSPB CONSERVATION OFFICER**

- 6.42 'We welcome the reduced scale, Nevertheless, RSPB Scotland **objects** to the amended application in its current form
- 6.43 *The bird data on which the conclusions of the Environmental Statement (ES) are drawn are now at least four years old and their current applicability is therefore suspect. More up-to-date, comprehensive information should be collected and assessed.*
- 6.44 *There are identified a number of errors in the calculation of collision risk.*
- 6.45 *A change in the avoidance rate adopted for golden eagle by SNH from 0.98 to 0.99 has the substantial effect of **halving** the predicted mortality rate*
- 6.46 *The predicted number of golden eagle mortalities over the lifetime of the proposed development is unacceptably high.*

- 6.47 *A cumulative adverse effect on the Western Isles golden eagle population as a whole cannot be ruled out.*
- 6.48 *The proposal is contrary to the Western Isles Structure Plan 2003, in particular policy RM11 'Habitats and Species'.*
- 6.49 *The proposal is contrary to Scottish Planning Policy (SPP) 6.*
- 6.50 *The cumulative predicted high mortality would arise almost entirely from developments at Pairc and Muaitheabhal/Feiriosbhal. A revised scheme at Pairc, which substantially reduced predicted mortality, could be acceptable.*
- 6.50 *RSPB Scotland would be prepared to reconsider its objection, provided that turbine number or layout were adjusted in such a way that the predicted golden eagle collision mortality were reduced and any predictions were based on current, or still valid, information.'*

## **SUMMARY OF INTERNAL CONSULTATION RESPONSES**

### **ENVIRONMENTAL HEALTH**

#### **Noise**

- 7.1 *'Background noise readings have now been provided. However, despite contact from the consultants in January 2006 when they indicated they would be in touch to discuss monitoring locations, this was never done and is contrary to the advice in ETSU-R-97.*
- 7.2 *Having looked at the background readings at the three locations, in conjunction with the predicted levels from the operation of the windfarm, I note from the submission that all of the predicted levels are below the significance criteria in ETSU. The guidance makes reference to low noise environments in particularly quiet areas such as are the case here and states that using the considerations of predicted noise levels over background as in other cases is unduly restrictive. Consequently, although the amenity of the area could be disadvantaged in terms of noise, this is accepted in the guidance.*

#### **Other Issues**

- 7.3 *'The other issues raised in my original submission have not been addressed, so those comments remain the same.'* (A copy of the original comments is included as Appendix 4).

### **BIODIVERSITY OFFICER**

- 7.4 No comments.

### **COMHAIRLE ARCHAEOLOGIST**

- 7.5 *'The amended scheme is better from a cultural heritage point of view than the previous scheme. However, my recommendation is that we continue to propose the standard mitigation conditions, which I requested, be attached to the previous scheme. The mitigation recommended by the archaeological contractor is not acceptable.'*

### **TECHNICAL SERVICES – ROADS**

- 7.6 *'No additional comments to those provided on the original scheme.'* (See Appendix5).

### **ECONOMIC DEVELOPMENT**

- 7.7 The full economic development appraisal is included as Appendix 6 to this report. A summary of the conclusions of the appraisal are provided below.
- 7.8 *'The Pairc Windfarm will comprise twenty-six 3MW turbines with an installed capacity of 94MW. Construction is scheduled to start in 2011 with the windfarm complete and operational by 2013.*
- 7.9 *The capital cost of the windfarm will be £107.6m with 10% of inputs (£10.93m) sourced from within the Outer Hebrides. This assumes a 5% share of turbine manufacture work, costed at £3.93m. If Arnish Point fabrication facility is in a position to take advantage of Pairc Windfarm contracts, this local share of manufacture could feasibly rise to 15% and an additional £7.86m of inputs could be captured for the Outer Hebrides.*

- 7.10 *The two-year construction phase will give rise to 85 FTE jobs, of which 13 FTE's will be undertaken by local contractors. On site employment will release total gross salaries of £7,014,080 over the two years of construction. Following deductions, net 'take home' pay of £3.6m could accrue to workers resident in the Western Isles. Indirect and induced employment during construction will be in the order of 14 FTE jobs and could release a further £6.5m of net income into the economy.*
- 7.11 *Total operating costs for the Pairc Windfarm are estimated at £11,982,484 per annum, of which £1.78m per annum will be spent locally on supplies and services. There will be an additional £1.19m of local induced output.*
- 7.12 *Direct employment through operation and maintenance of the windfarm is expected to be 15 FTE jobs with 12 based in the Outer Hebrides. This could bring £208,000 of gross annual salaries into the local economy. When added to indirect and induced outputs, this gives a total of £580,000 per annum in Gross Operational Income for the Outer Hebrides economy.*
- 7.13 *Total land rentals over the projected 25 year lifespan of the windfarm will be between £6.9m and £11.9m. It is assumed that land rentals will be split 50/50 between the landowner and shareholders in the Common Grazings. 6 local FTE jobs could be created through these rentals.*
- 7.14 *The developer will make a package of benefits available to surrounding communities and Western Isles Development Trust. The total value of this package at today's prices is £306,000 per annum or £7.65m over the lifetime of the windfarm. Investment of this scale could create 10 FTE jobs in the local economy.*
- 7.15 *Wider 'shadow' and 'external' benefits will accrue in the local renewable energy, Hydrogen, research, education and tourism sectors. These outputs are referenced in the Economic Impact Assessment but it is not possible to accurately value their impact in terms of jobs or cash investment.*
- 7.16 *The overall impact from the construction and operational phases can be summarised as follows:*

<b>Development and Construction Phase</b>	<b>Assessment FTE's</b>
Development and Construction	13

<b>Operational Phase</b>	<b>Assessment FTE's</b>
Wind Farm Employees	15
Rental Payment Employees	6
Community Fund Employees	12
<b>TOTALS</b>	<b>46</b>

## **REPRESENTATIONS**

8.1 Representations have been received from the following:

- Mr P Bailey, Chairman, Pairc Community Council.

The full terms of the representation can be read on the file at the Development Department. However, they can be summarised as follows:

- Regarding the subject of including Planning Agreements to the above subject matter reference should be made to Western Isles Structure Plan and in particular DM9 – Developer Consultation and Community Benefit, which states: *'Where appropriate, the Comhairle will seek to maximise the opportunity for additional benefits to the local community arising from major development proposals through negotiations with developers and securing planning agreements.'*
- Circular 12/1996 – Town & Country Planning – Planning Agreements and Revision of Circular 12/1996: Planning Agreements – Consultation Paper December 2008 which outlines among

others the following: 4..... ‘ *Planning agreements should only be sought where they are required to make a proposal acceptable in land use planning terms. Such agreements can be used to overcome obstacles to the grant of planning permission; in this way development can be allowed to proceed, the quality of development can be enhanced and potentially negative impacts on land use, the environment and infrastructure can be reduced, eliminated or compensated for.*’ And ‘**Relationship to proposed development test.13.** *Planning agreements must relate to the development being proposed. There should be a functional or geographical link between the development and the offer being provided as part of the mitigation offered as part of the developer’s contribution.*’

- The inclusion of the following in a planning agreement would go a long way in reinforcing the statement made by SSE that “*Scottish and Southern Energy has a strong track record of working closely and positively with local communities within the areas where its operational windfarms are sited*”.
- After consultation with Pairc Community Councillors and the Pairc Trust Directors the following suggestions were put forward to be included in a planning agreement.
- Prior to approval of application a full Risk Assessment to be carried out and a Method Statement produced to ensure All Emergency Service vehicles will not be impeded in anyway.
- Improved road access; primarily with regard to the access point to the development from the B8060 west of Tabost, but also taking the following relevant considerations into account.
- Widening of the narrow bridge to the west of Tabost that is very close to the proposed access road junction of the SSE windfarm. This narrow bridge is dangerous at the moment but will become even more dangerous particularly during the construction stage.
- Surfacing repairs to the roads between Stornoway and Tabost, prior to and after construction.
- Restriction of all site vehicles, so that no transporting of equipment or materials, site vans, minibuses or cars to be allowed on the main roads between Stornoway and Tabost between the hours of 7.30am and 9.00am and again between 4.00pm and 6.00pm.
- Stock fencing along roadsides and serious consideration for animal welfare and stock exclusion on muddy sites once construction is underway.
- Consideration by the Developer to use the existing empty Business Units located on the B8060 west of Tabost, also promoting the use of other local businesses in the area for example Ravenspoint Hostel, Shop and Tea Room and the Erisort Inn Accommodation / Dining facilities, in the first instance.
- SSE’s Environmental Statement – further information – Volume 1 – Non technical summary further states: *Suitably qualified local firms will be encouraged to bid as main contractors, sub-contractor or supplier, for a significant portion of the construction work And There would be the requirement for some 15 full time operational and maintenance jobs, most of which would be filled by local recruitment.*
- Bearing in mind that South Lochs is a designated hard action area (Western Isles Structure Plan SC1 – Sustainable Community Areas), and the fact that a lot of the new proposed jobs would be specialised, would SSE agree to instigate a training program to ensure local people have the relevant skills to apply for these positions, in particular the 15 full time posts.

#### **COMMENTS FROM APPLICANT**

- 9.1 At the time of writing the report no comments had been received from the applicant.

#### **POLICY CONTEXT**

- 10.1 This section of the Report aims to discuss, in general terms, current planning and other policy context relevant to the Pairc Windfarm application. The section does not seek to evaluate the proposal against policy.

#### ***Climate Change and Energy Policy***

- 10.2 *Climate Change* - Climate change is seen as the main challenge to deliver future development that is sustainable. The principal area of agreement concerns the urgent need to tackle greenhouse gas emissions. In Scotland it is the ‘Changing Our Ways – Scotland’s Climate

Change Programme' that sets out the Government's commitment to reduce green house gas emissions and reduce Scotland's vulnerability to the impacts of Climate Change.

10.3 Other key framework documents on Climate Change are:

- *Climate Change - The UK Programme, 2006*
- *State of Scotland Environment Report, SEPA, 2006*
- *Stern Report, 2006*
- *Patterns of Climate Change Across Scotland, SNIFFER, 2006.*

10.4 'Choosing Our Future: Scotland's Sustainable Development Strategy' sets out the context that drives the Government's sustainable development agenda. The Strategy highlights, as key priorities: *the need to protect and manage natural resources for the long term; the need to protect the historic environment; and the need to change the way Scotland generates and uses energy with a view to reducing greenhouse gas emissions and maximising our considerable renewable energy potential.*

10.5 'Energy - UK Energy Review, DTI, 2006' - In terms of UK energy policy, the Governments energy review highlighted the need for onshore wind and has re-stated a target of 20% of UK's electricity from renewable sources from renewables. In response to the review, the Comhairle has stated:

*'The Western Isles has one of the most abundant and constant sources of renewable energy in the inhabited world. This energy comprises a mixture of wind, wave and tidal opportunities.*

*Applications for windfarms in the Western Isles that would produce over one gigawatt have already been submitted for approval. Other proposals that have passed Environmental Assessment Scoping stage would take the proposed output level to about 1.5 gigawatts.*

*Wind assessments made by the applicants for these projects have shown a significantly higher efficiency rate (of around 45%) than in most mainland locations where variability in wind levels has produced an average efficiency rate that is closer to 30%.*

*These factors show that the renewable resource potential of the Western Isles is extremely high to the extent that, notwithstanding existing geographical and infrastructure (notably lack of existing grid capacity) constraints, there is serious commercial interest in tapping a vast resource that would last for the foreseeable future.*

*At the same time as adding significantly and diversely to the nation's energy needs, the impact on the local economy would transform one of the poorest regions into a long term, self sustaining economy comparable with mainland Britain'.*

10.6 Scotland's target is to increase the proportion of electricity generated from renewable sources in Scotland from 11% to 18% by 2010. A further aim is to reach 40% by 2020. The UK Government commitment to climate change was recently been reaffirmed in the climate change speech by the Prime Minister on 19 November 2007.

### **Scottish Planning Policy National Planning Framework**

10.7 The National Planning Framework, produced by Scottish Ministers is a material consideration in the decision making process. It will also no doubt be a key consideration in the Government's determination of this application.

10.8 In the first National Planning Framework (NPF1) (2004), the threat posed by climate change (and within that, the need to develop renewable energy sources); population decline; and the need for energy infrastructure were identified as key drivers for change. The natural energy resource of Scotland's west coast was highlighted along with the constraints of existing infrastructure. NPF1 saw a key improvement to the electricity transmission system to include a new link to the Western Isles (para 139) as a priority.

10.9 NPF1 highlighted the problem of population decline as most acute in the Western Isles (para 59). It also acknowledged slow economic progress in the remoter areas of the Western Isles (para 40) and the economic fragility of the Western Isles as a whole is emphasised in paras

175 and 176. Para 177 suggested that the cultural and environmental resources of the Western Isles are a national asset, and the Framework suggested that its climate and geography offer great potential for harnessing renewable energy, particularly wind, wave and tidal power. The NPF main spatial strategy map identified the Western Isles as a (HIE) Fragile Area.

- 10.10 In summary, NPF1 clearly recognised the fragile economic circumstances of the Western Isles as a national issue, and similarly the value of the islands' natural and culture heritage resources. The NPF set out a national view that the Western Isles had the potential to develop renewable energy (i.e. including windfarms). However, no weight was given to the scale of the contribution that the Western Isles could play in the national agenda or the weight to be given to the benefits of large-scale developments over 'environmental' factors. What was clear was that there were very difficult choices to be made of national significance and that the Planning Authority should carefully consider applications in the light of these national issues.
- 10.11 In 2008 Scottish Ministers began the process of preparing a second National Planning Framework (NPF2) that acknowledges that the islands continue to face the problems of population and economic decline.
- 10.12 NPF2 has recently reached committee stage. Unlike the first Framework, NPF2 provides spatial guidance for a range of national developments based on the principle of promoting sustainable economic growth. Climate change is seen as one of the principal challenges and recognises the role that renewable energy would play in addressing it.
- 10.13 NPF2 sees rural areas as being well placed to contribute to and benefit from the development of renewable energy given the location of the necessary wind, wave and water resources. It aims to develop the extensive renewable energy potential while safeguarding the environment and communities to achieve the Government's commitment to development and sustaining Scotland's energy industries.
- 10.14 The potential of the west coast for renewable energy development is recognised and to that end NPF2 has included as one of the national developments 'grid reinforcements to support renewable energy development and specifies a new sub sea cable link of the Outer Hebrides.

### **Scottish Planning Policy and Advice**

- 10.15 The Scottish Government's key policy document on the operation of the Planning system is 'Scottish Planning Policy (SPP) 1 – the planning system'. This policy document defines the framework for how planning matters should be dealt with. The treatment of any large scale renewables application is guided by the framework set out in SPP1.
- 10.16 Scottish Planning Policy 6 – Renewable Energy' was published in March 2007. SPP6 is a positive framework to encourage the development of renewable energy technologies. The main purpose of the SPP6 is to provide guidance to Local Authorities in terms of Development Plan preparation. However, the SPP does state that it will also be applied to the authorisation of onshore electricity generation schemes under Section 36 of the Electricity Act. With specific reference to windfarm developments some key policy issues are raised in the SPP. These are:
- Confirmation of the 40% renewables target by 2020;
  - Hydro and onshore wind is expected to continue to make the most significant contribution to the targets;
  - Planning Authorities should ensure that environmental, economic and social benefits are fully exploited, while at the same time: meeting international and national statutory obligations to protect designated areas, species and habitats of natural heritage interest and the historic environment from inappropriate forms of development; and minimising impacts on local natural heritage, communities, tourism, recreation and aviation interests;

- Planning Authorities are to see the Development Plan as the key framework for considering site selection;
- Development Plans are to have a clear spatial strategy in the future;
- The main consideration in determining areas of search in Development Plans are natural heritage, historic environment, tourism and recreational interests, aviation and defence interests, cumulative impacts, the wind resource, impact upon communities, and the electricity grid;
- The need to update Development Plans;
- Where there are currently no areas of search, the normal criteria-based approach in development plans, the policies in the SPP, and all other material considerations should be taken into account when assessing renewable energy proposals. Planning Authorities should continue to determine those applications that are, or come, before them ahead of revised local policies being put in place;
- Consideration of the significance of any adverse impacts of a renewable generation proposal should have regard to the projected benefits of the proposal, in terms of the scale of its contribution to addressing climate change through its input to the Scottish Executive's targets for renewable energy;
- It is common practice for temporary consents of 20 or 25 years to be issued for windfarm developments. Planning Authorities should include appropriate conditions for the decommissioning of renewable energy developments, particularly windfarms, and their restoration when they reach the end of their design life, taking into account any proposed after-use of the site. In addition, planning authorities should ensure that sufficient finance is set aside to enable operators to meet their restoration obligations. An authority should satisfy itself that this finance is secured irrespective of whether the developer or operator of the development is still in business at the end of the consent period (and may, for example, require financial guarantees binding against the developer or operator and any successors in title, by way of a Section 75 Planning Agreement), as part of the approval of planning permission to ensure that restoration will be fully achieved.

10.17 The general thrust of SPP6 is towards a positive approach to renewables and a clear focus on the Development Plan as the key means to guide development. The Comhairle's Development Plan is discussed in more detail below. Relevant 'considerations' in SPP6 are considered in the body of the report, including, the new emphasis on assessing cumulative impact.

10.18 Other National Planning Policy Guidance of importance to this application includes:

- Mineral Extraction: NPPG 4;
- Archaeology and Planning: NPPG 5;
- Planning and Waste Management: NPPG 10;
- Natural Heritage: NPPG 14;
- Rural Development: NPPG 15;
- Planning and the Historic Environment: NPPG 18;
- Economic Development: SPP 2; and
- Planning and Flooding: SPP 7.

10.19 Scottish Planning Advice Note (PAN) 45 sets out advice on good practice in terms of Renewable Energy. Of particular relevance to this application (which forms a useful check list) is:

- Renewable energy is seen as a positive driver for rural development;
- The adequacy of noise mitigation measures – mechanical and aerodynamic;

- The degree of disturbance caused by construction activity;
- The use of helicopters to require careful consideration with regard to impact upon protected bird species during breeding seasons;
- The control of vehicle movements during construction and operation;
- The reinstatement of roads that are not strictly required for ongoing operation once construction complete;
- The restoration arrangements after decommissioning;
- The duration of consent (usually linked to life of the turbines);
- Icing problems with regard to blades;
- The impact on communications systems;
- The impacts upon civil and military aviation;
- The mitigation proposed for interference with television reception;
- The proximity to roads – at least height of blade tip (appears to have been achieved);
- Shadow flicker;
- The under grounding of power lines from turbines to sub stations; impacts of power lines from substation to the distribution system;
- The sensitivity of the hydrology of peat habitats;
- Colour – semi matt white or off white preferred;
- Locating power lines, fences, masts, buildings etc to minimise clutter;
- Visual assessments; and
- The cumulative effects of neighbouring windfarm developments.

10.20 In particular, the advice provides detail on landscape issues: it states that there are no landscapes into which a windfarm will not introduce a new and distinctive feature. The capacity of landscapes to accommodate windfarm development will depend upon impact on existing character and the modification of impact through design (Landscape Capacity study for onshore windfarm energy development in the Western Isles is highlighted below). In terms of visual impact PAN 45 recognises that windfarms are likely to be highly visible. The advice suggests:

*‘Turbines in windfarms are likely to be tall, frequently located in open land, and therefore likely to be highly visible. Domestic turbines will be smaller. It will normally be unrealistic to seek to conceal them. Developers should seek to ensure that through good siting and design, landscape and visual impacts are limited and appropriate to the location. The visual effect will be dependent on the distance over which a windfarm may be viewed, whether the turbines can be viewed adjacent to other features, different weather conditions, the character of the development and the landscape and nature of the visibility. The following is a general guide to the effect which distance has on the perception of the development in an open landscape’.*

General Perception of a Windfarm in an Open Landscape (PAN 45)

<b>Distance</b>	<b>Perception</b>
Up to 2 kms	Likely to be a prominent feature
2-5 kms	Relatively prominent
5-15 kms	Only prominent in clear visibility - seen as part of the wider landscape
15-30 kms	Only seen in very clear visibility - a minor element in the landscape.

*The visual impact of windfarms will be affected by their siting and layout in relation to local land form and landscape characteristics, and the qualities of the specific site, as well as by the number of turbines. Different layouts will be appropriate in different circumstances. For example, grouped turbines can normally appear acceptable as a single, isolated feature in an open, undeveloped landscape, while rows of turbines may be more appropriate in an agricultural landscape with formal field boundaries. Although windfarms may be complex, they should not appear confusing in relation to the character of the landscape. Ideally, they should be separate from surrounding features to create a simple image. The design of each development must be appropriate to its site.'*

10.21 In terms of birds and habitats, the guidance suggests that in areas such as SPAs, impacts upon birds could represent potential constraints to windfarm development.

10.22 PAN 45 suggests that there is a range of opportunities presented by windfarms to support rural economies and communities. The guidance also recognises that the role of tourism in the rural economy, and the assets on which it is based, should be reconciled with the need to promote renewable energy generation. Other PANs of relevance include:

- PAN 42 Archaeology - The Planning Process and Scheduled Monument Procedures (1994);
- PAN 56 Planning and Noise (1999);
- PAN 58 Environmental Impact Assessment (1999); and
- PAN 60 Planning for Natural Heritage (2000).

#### **Development Plan**

10.23 In terms of the Development Plan, the approved Comhairle Structure Plan and the adopted Western Isles Local Plan 2008 are the main documents.

10.24 The Structure Plan's key aim is to provide a land use planning framework for sustaining the communities of the Western Isles by:

Setting out policies that:

- *promote sustainability and improve quality of life;*
- *encourage population retention, inward migration and address the imbalances in the demographic structure;*
- *help support those who wish to live, work and invest in the Western Isles.*

10.25 Policy SC2 of the Structure Plan '*Retain Population and Encourage In-migration*' indicates that:

*'The Comhairle will work with its Community Planning partners to develop targeted strategies which assist in retaining population and encourage in-migration of key groups such as entrepreneurs, the young and skilled and small business owners and managers.'*

The Structure Plan has been developed around a strategy that:

- *encourages economic activity and appropriate levels of service provision and investment;*
- *guides the future development and use of land;*
- *utilises resources in ways that are sustainable;*
- *enables balanced, informed assessments of potential development proposals.*

10.26 A number of more specific Structure Plan policies have a bearing on this application, covering the topics of Development Management, Resource Management, Economic Development, Housing, Community and Leisure Facilities, and Transportation. The main renewable energy policy, a criteria based approach, is contained in the Structure Plan, policy ED2 below:

## *ED2 Development of Alternative and Renewable Energy Resources*

*'The Comhairle, in partnership with other public agencies and the private sector, will develop proposals that help realise the latent renewable energy development potential of the Western Isles. It will also promote improvements to the interconnector with the mainland to enable the export of energy.'*

*Development proposals for hydro, solar, wave, tidal and wind (on-shore and off-shore) energy schemes and associated infrastructure, including proposals for non-grid, domestic-scale schemes, will be viewed positively, subject to satisfactory assessment of all of the following:*

- i) the impact on local communities and any other existing or proposed land uses and interests;*
- ii) the impact, including cumulative impact, on natural and built heritage resources;*
- iii) the local and wider benefits that the proposal may bring;*
- iv) the adequacy of reinstatement arrangements;*
- v) the requirements of other Structure Plan policies.*

*Non-permanent structures will normally be approved for a temporary period.*

*Having regard to the above criteria, the Local Plan will identify potentially suitable sites including provision of safeguarding or exclusion areas to ensure that future neighbouring developments or activities do not undermine the viability of the energy resource.'*

10.27 The Western Isles Local Plan takes account of SPP6. Proposal LP/ED13 Renewable Energy Supplementary Guidance states "The Comhairle will review its supplementary planning guidance on renewable energy following production of SPP62. That guidance is the subject of a concurrent report to the Sustainable Development Committee.

10.28 In terms of the Pairc Windfarm proposals, some of the key issues from the Development Plan are:

- The Structure Plan provides the criteria based approach to assessment.
- Local plan policy LP/ED3 refers to 'protecting areas' with existing renewables planning consents:

*Development proposals adjacent to sites with planning consent for renewable energy development will be considered carefully in order to safeguard the viability of the energy resource.*

- The Comhairle is committed to review its supplementary planning guidance on renewable energy following the production of SPP6.

10.29 The Structure Plan criteria and related Local Plan policies are taken into account in the main part of the report below.

### **Supplementary Planning Guidance**

10.30 The Comhairle approved a paper entitled '*Considerations for Renewable Energy Developments in the Western Isles*' in November 2004, which indicates broad policy support across the Western Isles for the development of renewables.

### **Principles**

*Working from the national and the Western Isles contexts, the following principles set out a framework for the Comhairle's consideration of the development of renewable energy in Western Isles.*

- 1. The general approach is to realise the significant potential of the Western Isles to help meet National Renewable Energy targets. It is expected that this will involve short and medium term developments utilising existing technologies (notably wind turbines) that depend on electricity export capabilities. Such developments will provide a foundation for*

*longer-term development of other renewable energy capabilities, such as wave and tidal power and the production and use of hydrogen and other means of storing and transmitting energy.*

- 2. This approach critically depends on the provision of a high capacity inter-connector that will allow the export of large amounts of electricity.*
- 3. Optimum benefit to, and mitigation of any adverse impact on, the social, economic and environmental wellbeing of the Western Isles will be sought through contributions to the Western Isles Development Trust. Developers will be encouraged to reach agreement with the Western Isles Development Trust over such contributions.*
- 4. Developers will be expected to engage with and positively involve the local community in the development of renewable energy projects.*
- 5. Local communities will be encouraged to play an active role in the development of renewable energy and may wish to develop 'community owned' schemes either independently, or as part of schemes promoted by developers.*
- 6. The Comhairle will encourage the formation of liaison committees between developers and affected communities.*
- 7. The Comhairle will encourage a fair distribution of wayleave payments to local communities.*
- 8. The Comhairle will encourage the development of renewable projects that promote new or innovative ways of generating, transmitting, storing and/or using energy.*
- 9. The Comhairle will take the view that the requirement under the Environmental Assessment Regulations for consideration to be given to 'alternative sites' be limited to alternatives within the Western Isles.*
- 10. In respect of large scale onshore renewable energy developments (over 50MW) the Comhairle will aim to negotiate consent periods of a duration that will complement the development of renewable energy production and infrastructure on and from the islands.*
- 11. In its consideration of renewable energy development proposals, the Comhairle will consider the siting of the infrastructure, the method of construction, and the method of procurement of contracts for construction and operation.*
- 12. The Comhairle will seek confirmation from the Crown Estate that any fisheries exclusion zone that may result from installation of a sub-sea cable will be compensated for.*
- 13. In new developments, the Comhairle will encourage appropriate renewable energy and energy saving measures that will contribute locally to fossil fuel reduction and to sustainable development.*

## **Planning Guidance**

*In addition to current National and Western Isles planning policy guidance, the following supplementary planning guidance will be used in the consideration of development proposals.*

- 1. As well as taking account of the key criteria identified at paragraph 1.10 above, for proposals that may affect nature conservation designated areas, it will be for the developer to show that:
  - a) The reasons for the designation will not be irreversibly damaged and that the designated area has the capacity to accommodate the proposed development through mitigation and management arrangements, and that;*
  - b) mitigation, management and compensatory measures are proposed to safeguard protected species in and around the development site.**
- 2. In the assessment of the likely impact of proposed onshore wind energy developments, consideration will be given to the "Landscape Capacity Study for Onshore Wind Energy Development in the Western Isles" (2004).*
- 3. Medium and large scale renewable energy developments (as a rule, those with more than 1 MW generation capacity) will normally be subject to a requirement for completion*

*of an agreement under Section 75 of the Town and Country (Scotland) Act 1997 to include:*

- *Land restoration during and after completion of the development phase, and at any time when any part of the development is modified or becomes redundant and the taking out of a reinstatement bond to ensure acceptable restoration;*
- *Off site works to roads or other services that reasonably require improvements to accommodate the proposed development;*
- *Any safeguarding or remediation works to any off site feature or receptor that may be affected by the proposal.*

### **Other Relevant Matters**

- 10.31 'It's in Your Hands: A Strategy for the Conservation and Enhancement of Biodiversity in Scotland' sets out the vision for Scotland's biodiversity. It gives a 25 year framework to conserve and enhance biodiversity for the health, enjoyment and well-being of the people of Scotland, in the context of the EU commitment to "protect and restore the functioning of natural systems and to halt the loss of biodiversity".
- 10.32 The Nature Conservation (Scotland) Act 2004 places a statutory duty on all public bodies to further the conservation of biodiversity in exercising any of their functions. Planning Authority functions play a key role in fulfilling this duty and in ensuring that the natural environment remains a key consideration in the sustainability of human activity and to quality of life.
- 10.33 There are a number of other publications and guidance published which have relevance to this application. These include:
- Outer Hebrides Single Outcome Agreement 2008.
  - Corporate Strategy – Comhairle nan Eilean Siar 2007;
  - Creating Communities of the Future – OHCPP;
  - CnES Western Isles Local Biodiversity Action Plans;
  - CnES Outer Hebrides Access Strategy 2006;
  - Landscape Capacity Study for Onshore Windfarms in the Western Isles – SNH/CnES;
  - Habitats and Wild Birds Directives (Habitats Directive (SE circular 9/95 - revised 2000);
  - Visual Analysis of Windfarms: Good practice Guide – SNH 2005;
  - Guidance on the Cumulative Effect of Windfarms – SNH – 2005;
  - SNH Guidelines on the Environmental Impacts of Windfarms 2001;
  - SNH policy on Renewable Energy 2002;
  - SNH Strategic Locational Guidance for Onshore Windfarms in respect of the Natural Heritage – updated March 2009;
  - SNH papers on Wild Land Search Areas;
  - Western Isles Regional Accounts 2003 – 2005;
  - Controlled Activities (Scotland) Regulations – 2005;
  - Local Housing Strategy – CnES;
  - RSPB: Windfarms and Birds 2003;
  - RSPB National Bird Sensitivity Mapping 2006;

- 10.34 In June 2006 a research report was completed entitled “Bird Sensitivity Map to Provide Locational Guidance for Onshore Windfarms in Scotland”. The report was prepared by the RSPB and jointly funded with SNH. The sensitivity map was produced at 1km square resolution, with each 1km square in Scotland assigned one of three sensitivity ratings. The report indicates that particular sensitivities occur in the Western Isles as well as other areas in the North West of Scotland.

### **EVALUATION OF CHANGES AGAINST COMHAIRLE POSITION**

- 11.1 The Comhairle’s view of the project given in 2007, as reflected in Appendix 1, was based on the following key matters:

- Development Plan policy;
- Considerations for Renewable Energy Developments in the Western Isles;
- National Planning Guidance and national policy context; and
- A reduced scale of development.

Looking at each of these key justifications in turn, and drawing upon the information provided in earlier sections of this report, comments are provided on how changes put forward in the Addendum could affect the key justifications of the Comhairle’s 2007 decision.

#### **Development Plan Policy**

- 11.2 The key Development Plan policy in the consideration of this development is Structure Plan ED2

#### ***Structure Plan - ED2 Development of Alternative and Renewable Energy Resources***

*Development proposals for hydro, solar, wave, tidal and wind (on-shore and off-shore) energy schemes and associated infrastructure, including proposals for non-grid, domestic-scale schemes, will be viewed positively, subject to satisfactory assessment of all of the following:*

*The impact on local communities and any other existing or proposed land uses and interests;*

**Officer Comment 2007: the proposal is considered unacceptable without significant mitigation measures, including the removal of a number of turbines.**

**Officer Comment 2009: The turbines recommended by the Comhairle for removal have been removed from the proposed development. Therefore the development is now considered acceptable in terms of this policy.**

*The impact, including cumulative impact, on natural and built heritage resources;*

**Officer Comment 2007: mitigation measures required, including the removal of a number of turbines.**

**Officer Comment 2009: The removal of the turbines, reduced and amended infrastructure has reduced the cumulative effects.**

*The local and wider benefits that the proposal may bring;*

**Officer Comment 2007: positive benefits, both from a national and local perspective. A Planning Agreement could deal with certain aspects of the benefits.**

**Officer Comment 2009: A planning agreement would still be appropriate but given the reduced scale of the development the benefits will not be as significant.**

*The adequacy of reinstatement arrangements;*

**Officer Comment 2007:** requires to be clarified in a concluded method statements/restoration plans and through the use of a Planning Agreement.

**Officer Comment 2009:** No change.

*The requirements of other Structure Plan policies;*

**Officer Comment 2007:** development generally supported; mitigation measures to address specific issues. Compatibility with Structure Plan policies SC2, DM1, DM9, RM9, RM14, ED2, ED8 and HCL6. Potential conflict with policies DM7, RM8, RM11, RM 15, and ED14. Appropriate Assessment to be carried out by Scottish Ministers in respect of Structure Plan policies RM8 and RM11 (Habitats and Species).

**Officer Comment 2009:** mitigation measures still required to address specific issues. Compatibility with Structure Plan policies SC2, DM1, DM9, RM9, RM14, ED2, ED8 and HCL6. Appropriate Assessment to be carried out by Scottish Ministers in respect of Structure Plan policies RM8 and RM11 (Habitats and Species).

*Non-permanent structures will normally be approved for a temporary period;*

**Officer Comment 2007:** any consent should specify a time period; probably 25 years based on the developers ES. However, the expected life of the development requires to be clarified with the Developer.

**Officer Comment 2009:** A consent based on the expected lifespan of the turbines is still appropriate. The expected life of the development is still be clarified.

Relevant extracts from Considerations for Renewable Energy Developments in the Western Isles Nov. 2004.

### ***Principles***

*The general approach is to realise the significant potential of the Western Isles to help meet National Renewable Energy targets. It is expected that this will involve short and medium term developments utilising existing technologies (notably wind turbines) that depend on electricity export capabilities. Such developments will provide a foundation for longer-term development of other renewable energy capabilities, such as wave and tidal power and the production and use of hydrogen and other means of storing and transmitting energy.*

*This approach critically depends on the provision of a high capacity inter-connector that will allow the export of large amounts of electricity.*

**Officer Comment 2007:** The development should be viewed positively in light of the above.

**Officer Comment 2009:** No change.

*Optimum benefit to, and mitigation of any adverse impact on, the social, economic and environmental wellbeing of the Western Isles will be sought through contributions to the Western Isles Development Trust. Developers will be encouraged to reach agreement with the Western Isles Development Trust over such contributions.*

**Officer Comment 2007:** Such agreement, if reached, can be reflected in a Planning Agreement.

**Officer Comment 2009:** A planning agreement would still be appropriate but consideration should be given to the views of Pairc Community Council. This is discussed below.

*Local communities will be encouraged to play an active role in the development of renewable energy and may wish to develop 'community owned' schemes either independently, or as part of schemes promoted by developers.*

**Officer Comment 2007:** Such agreement, if reached, can be reflected in a Planning Agreement.

**Officer Comment 2009:** No change.

*The Comhairle will encourage the formation of liaison committees between developers and affected communities.*

**Officer Comment 2007:** This can be reflected in any terms and conditions of a consent.

**Officer Comment 2009:** No change.

*In respect of large scale on-shore renewable energy developments (over 50MW) the Comhairle will aim to negotiate consent periods of a duration that will complement the development of renewable energy production and infrastructure on and from the islands.*

**Officer Comment 2007:** any consent can specify a time period, probably 20-25 years.

**Officer Comment 2009:** No change.

*In its consideration of renewable energy development proposals, the Comhairle will consider the siting of the infrastructure, the method of construction, and the method of procurement of contracts for construction and operation.*

**Officer Comment 2007:** the siting of infrastructure and construction, which is part of this application, has been considered. The procurement of contracts for construction and operation can be reflected in a mutually agreed Planning Agreement.

**Officer Comment 2009:** No change.

#### ***Planning Guidance***

*...for proposals that may affect nature conservation designated areas, it will be for the developer to show that:*

*a) The reasons for the designation will not be irreversibly damaged and that the designated area has the capacity to accommodate the proposed development through mitigation and management arrangements, and that;*

*b) mitigation, management and compensatory measures are proposed to safeguard protected species in and around the development site.*

***Officer Comment 2007:*** Scottish Ministers will need to be satisfied on the significance of the impact on Ornithological interests through an Appropriate Assessment of the proposal or on any revised/reduced scale of proposal. Mitigation measures in this instance will relate largely to the removal of turbines and other measures secured by planning conditions.

**Officer Comment 2009:** The reduced scheme obviously lessens the potential impact on ornithological interests but Ministers will still need to be satisfied on the significance of the development through an Appropriate Assessment.

*In the assessment of the likely impact of proposed onshore wind energy developments, consideration will be given to the "Landscape Capacity Study for Onshore Wind Energy Development in the Western Isles" (2004).*

***Officer Comment 2007:*** the study has been considered in the ES and within the body of this report with regard to landscape character and landscape capacity. Certain turbines should be removed with reference to the guidance contained in the above study.

**Officer Comment 2009:** The turbines recommended for removal were largely based on the impact on the landscape character and landscape capacity. The development now satisfactorily takes into account the study "Landscape Capacity Study for Onshore Wind Energy Development in the Western Isles" (2004).

*Medium and large scale renewable energy developments (as a rule, those with more than 1 MW generation capacity) will normally be subject to a requirement for completion of an agreement under Section 75 of the Town and Country (Scotland) Act 1997 to include:*

- *Land restoration during and after completion of the development phase, and at any time when any part of the development is modified or becomes redundant and the taking out of a reinstatement bond to ensure acceptable restoration;*
- *Off site works to roads or other services that reasonably require improvements to accommodate the proposed development;*
- *Any safeguarding or remediation works to any off site feature or receptor that may be affected by the proposal.*

**Officer Comment 2007: approval of the development should be subject to such an agreement being mutually agreed between interested parties.**

**Officer Comment 2009: No change.**

- 11.3 The Comhairle's conclusion on the original scheme was reached having considered the detail of the application, the Development Plan, key local and national policy issues mitigation strategies, consultees responses, and responses from individuals and groups. In 2007, it was concluded that the development as it was then presented on balance was unacceptable.
- 11.4 In light of the need to meet national renewable targets, the general fit with policy agendas, and the local economic development and rural development opportunities created by such a proposal, it was considered that mitigation should be sought to enable a reduced scale of development to go ahead on the site. It is considered that the reduced scheme as now proposed has overcome many of the concerns.
- 11.5 The Report on the original scheme in 2007 suggested a mitigation strategy based on the following proposals.
- the removal of specific turbines;
  - a series of 'terms' that need to be satisfied before the Scottish Ministers conclude their view;
  - the preparation of agreed management plans before development commences; and
  - a suite of planning conditions to mitigate against anticipated negative environmental impacts of the development.
- 11.6 The report to committee in 2007 provided a schedule of the 31 turbines recommended for deletion. For each turbine listed, the primary and secondary reasons for recommending that it should be removed were identified.
- 11.7 The reasons for deletion which reflect Development Plan, national policy and guidance, consultee responses and representations received included:
- Proximity to settlement;
  - Visual Impact;
  - Noise mitigation;
  - Potential impact on public water supply;
  - Proximity to road, impact on road;
  - Reduction in impact on the NSA and/or Wild Land;
  - Reduction in the overall cumulative effect of the development; and
  - Aviation.

- 11.8 These were the principle reasons for recommending that certain turbines were removed. However, by reducing the overall scale of the development other factors can be mitigated against. With a smaller development the area of peat land disturbed will be less, there will be a reduced number of water crossings and less habitat disturbed. Therefore the overall environmental impact is less; there will be less potential for pollution, siltation, peatslides, impact on the protected species of otter, less effect on fisheries, etc. It is also assumed that the risks and significance of impact upon ornithological interests has also been reduced.
- 11.9 The reduction in scale of the development now proposed significantly reduces the key concerns of landscape, visual amenity and proximity impacts. It also allows the development site to be served by only one road off the B8060, which will enter the site before the village of Habost. This significantly reduces the physical impacts on the fragile roads systems in Pairc, and importantly the impact on the communities living in the area, particularly during construction.
- 11.10 In summary the revised scheme takes on board the mitigation strategy recommended by the Comhairle in 2007 principally by the removal of certain turbines. In addition a revised series of terms, the preparation of agreed management plans and planning conditions should satisfy this mitigation approach. These are provided at Appendix 7.

### **TERMS AND CONDITIONS**

- 12.1 The recommendations approved in 2007 by the Comhairle noted that support for the development was conditional upon a number of terms and conditions and a significant reduction in the scale of the development.
- 12.2 A key component of any set of terms and conditions is the availability of the comments of other key consultees such as SEPA, SNH and Historic Scotland. Given the timescales involved and all responses not being available at the time of writing this Report it was not possible to consider all their comments. Although amended terms and conditions are provided in Appendix 7 it would be prudent to reserve judgement on any final amendments until an analysis of other responses has been undertaken.
- 12.3 Taking into account the report above and the further information presented by the developer any review of the terms and condition should specifically also take into account:
- Statutory Consultee responses;
  - Feedback on Consultee responses received from the Developer; and
  - Further information concerning information requested by Environmental Health

### **SECTION 75 AGREEMENTS**

- 13.1 The recommendations approved in December 2007 by the Comhairle noted that support for the development was conditional upon the conclusion of a Section 75 Planning Agreement to cover:
- Decommissioning of the project and restoration of the site;
  - Any mutually agreed terms for community benefit;
  - Off site works required to implement the Transportation Management Plan and any compensation measures that cannot otherwise be guaranteed;
  - Terms for procurement;
  - The appointment of specialists to oversee the development; and
  - The number of jobs to be created directly.

Agreement of restoration measures would be dealt with by the submission of an outline Decommissioning and Restoration Plan prior to commencement of any development or any other date as agreed within legal agreements referred to above.

13.2 In addition it is recommended that the Comhairle, in preparing and concluding the Section 75 Agreement should also consider additional matters such as:

- The content and structure of other concluded Section 75 Planning Agreements where relevant;
- Latest Government advice on the use of Planning Agreements; and
- The representations made by Paicr Community Council for items to be included in the agreement.

13.3 In light of the Comhairle's previous decision and the drafting and conclusion of other Section 75 Agreements it is suggested that the Chief Executive could be authorised to conclude the agreement(s) on the basis of, and in accordance with the 'terms and conditions' set out in Appendix 7

### **DISCUSSION AND CONCLUSIONS**

14.1 The additional information submitted by Scottish and Southern Energy put forward a significant amount of new and detailed information. This report has primarily looked at the Addendum in the context of the view of the Comhairle taken in December 2007 and the mitigation strategy proposed.

14.2 In general terms, the changes suggest significantly less impact on landscape character, less impact on the local communities and less overall environmental impact from a species and habitats point of view. A reduction in economic impact is also observed.

14.3 The Scottish Government received approximately 1400 representations to the original proposals in 2007 and the Comhairle received 217 objections. However, only one representation (from the Paicr Community Council) has been received by the Comhairle with regard to the Addendum.

14.4 Having evaluated the key reasons for the Comhairle's view of the original development and the further Information submitted by the Developer it is concluded that the changes largely overcome the Comhairle's concerns which is reflected in the recommendations. It should be noted, however that there is a reduction in terms of the economic benefit. There are also a number of matters, which it is concluded would require the attention of Scottish Ministers:

- Any navigational aids required for aviation safety, eg lighting, colour of turbines;
- The cumulative impacts with other proposals;
- To reduce landscape impacts, 100% under grounding of the transmission lines within the application site should be a requirement;
- Terms and Conditions will require to be re-drafted;
- Outstanding Environmental Health Issues require to be dealt with in any revised terms and conditions; and
- The Comhairle does not change its stance on Archaeology related conditions.

14.5 A Section 75 Planning Agreement has not been drafted to date, but based on previous experience and the terms outlined above, delegation is sought to conclude such an agreement. In the event that a satisfactory agreement could not be concluded within any delegated powers the matter would be referred back to the Comhairle.

14.6 In terms of planning decisions, local authorities should continue to determine those applications that are, or come, before them ahead of revised local policies being put in place. The national and local planning policy has not shifted significantly to warrant a comprehensive re-appraisal of the project. Other relevant policy areas do not appear to provide any rationale for a comprehensive change of direction for the Comhairle given the view taken by the Comhairle in December 2007.

## PROPOSED TERMS AND PLANNING CONDITIONS

### FOR PAIRC WIND FARM

December 2007

It is recommended that any permission granted by the Scottish Ministers should be subject to the following:

1. Before any permission is issued by the Scottish Ministers, legal agreements shall be secured between Comhairle nan Eilean Siar, the applicant and any other relevant party holding an interest in the land under Section 75 of the Town and Country Planning (Scotland) Act, 1997, or any other appropriate enactment, to secure the following:
  - Decommissioning of the project and restoration of the site;
  - Any mutually agreed terms for community benefit;
  - Off site works required to implement the Transportation Management Plan and any compensation measures that cannot otherwise be guaranteed;
  - Terms for procurement;
  - The appointment of specialists to oversee the development; and
  - The number of jobs to be created directly.

Agreement of restoration measures shall be dealt with by the submission of an outline Decommissioning and Restoration Plan prior to commencement of any development or any other date as agreed within legal agreements referred to above.
2. Before any permission is issued by the Scottish Ministers an Appropriate Assessment should be carried out on the amended development, as recommended by Comhairle nan Eilean Siar.
3. Before any permission is issued by the Scottish Ministers, the following information and clarification should be sought in order to inform the terms of any conditions.
  - a) Clarification of the application site requiring the submission of a site layout plan with a definitive site boundary marked in red.
  - b) Clarification of the operational life of the development.
  - c) An assessment of wind shear.
  - d) An assessment of the impact on freshwater pearl mussel.
  - e) An assessment of the potential effects of shadow flicker.
  - f) An assessment of the impact on Maritime Communications.
  - g) The views of Scottish Water.
  - h) Background noise readings.
4. Before any development commences, arrangements shall be agreed between the applicant and Comhairle nan Eilean Siar for establishing, staffing and funding the following essential watching/monitoring roles:
  - a) Environmental Management Committee: To comprise the developer, Comhairle nan Eilean Siar, Scottish Natural Heritage (SNH), Scottish Environmental Protection Agency (SEPA), Western Isles Fisheries Trust (WIFT)/ Western Isles District Salmon Fisheries Board (WIDSFB), Scottish Water, NHS Western Isles, any other relevant environmental interest and local community interests relevant to the area of work being undertaken at the time.
  - b) An ecologist; an archaeologist; a Roads and Traffic Management Officer and a Planning Conditions Monitoring Officer.
5. In addition to the above, any permission(s) issued by the Scottish Ministers should be subject to the planning conditions contained in the attached Schedule of Proposed Conditions unless agreed otherwise in writing beforehand with Comhairle nan Eilean Siar.

## SCHEDULE OF PROPOSED PLANNING CONDITIONS

### Clarifications and Time Limitations

**Condition 1** The development to which this permission relates shall commence within five years from the date of this permission.

*Reason* To comply with Sections 36 and 37 of the Electricity Act, 1989 and Section 58 of the Town and Country Planning (Scotland) Act, 1997.

**Condition 2** This consent shall expire 25 years after the date of first generation to the Grid commences, and the planning authority should be notified in writing when generation to the Grid commences. Within two years of the expiry date the wind turbines, wind monitoring masts and other fixtures associated with the development shall be removed and the site restored in accordance with the approved Decommissioning and Restoration Management Plan to the satisfaction of the Comhairle as planning authority unless a renewal of permission has previously been granted.

*Reason* To maintain a measure of control over temporary development in the interests of visual amenity and to allow the size and make up of the development to be re-assessed in the light of renewable energy production technology and opportunities prevailing at that time.

**Condition 3** The development to which this planning consent relates shall be carried out in accordance with amended proposals to include the deletion of turbines (and associated tracks) numbered T1, 2, 3, 4, 5, 9, 10, 11, 14, 18, 19, 23, 24, 25, 26, 28, 31, 32, 34, 37, 38, 43, 45, 46, 50, 52, 53, 54, 55, 56 and 57 as denoted on Figure 4.1 in the Environmental Statement which shall not be erected.

*Reason* In order to define the permission, and in order to safeguard amenities, landscape, natural and built heritage resources.

**Condition 4** No development to which this permission relates shall commence until the information required in conditions 7-12, 15-17, 22, 24, 26-31, 33-35, 40, 48-49, 51,59 and 60 of this permission have been submitted to and agreed in writing by the Comhairle, unless otherwise agreed in writing by Comhairle nan Eilean Siar.

*Reason* In order to define the permission and avoid doubt.

**Condition 5** Before development commences details of any alternative lay down area required as a result of the amendments outlined in condition 3 shall be submitted to and agreed in writing by the Comhairle.

*Reason* In order to define the permission, and in order to safeguard amenities, landscape, natural and built heritage resources.

**Condition 6** All of the transmission lines within the site, relating to this development, shall be underground.

*Reason* For the avoidance of doubt and in order to safeguard amenities, landscape, natural and built heritage resources.

### Further Details

**Condition 7** The following Management Plans shall be submitted to the Comhairle:

**(a) Transportation Management Plan** (including any off-site works schedule referred to in the Section 75 agreement)

**(b) Housing Management Plan**

**(c) Construction Method Statement.**

1. Nature Mitigation and Compensation.
2. Fisheries Management.
3. Rock extraction, batching plant and water extraction.
4. Pollution.
5. Health and Safety.
6. Peat Management.
7. Post Construction Restoration.
8. Water crossings.

**(d) Outline Decommissioning and Restoration Management Plan**

**(e) Public Health Management Plan**

**(f) Otter Management Plan**

No part of the development to which this permission relates shall commence until the Comhairle has issued approval of a, b, c, d, e and f of the Management Plans in writing following consultation with other members of the Environmental Management Committee. The development shall then be carried out and retained throughout the life of the development in compliance with the approved Management Plans unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In order to ensure proper management of the development.

**Condition 8** Prior to any turbine being erected in any of the identified groupings of turbines, a plan at a scale of 1:500 (or alternative scale as may be agreed in writing beforehand with the Comhairle) shall be submitted to the Comhairle to indicate the detailed siting of the turbines that shall not be allowed to microsite more than 50 metres from the centroid of each turbine location shown on the approved plans unless agreed otherwise by the Comhairle following consultation with the Environmental Management Committee.

*Reason* In order to ensure proper management of the development.

**Condition 9** Details of the materials and colours to be used for the external walls, roofs, windows and doors of the control building; details of the siting and external appearance of any temporary compound buildings or fixed plant and machinery; and details of the precise nature, size and colour of the turbines shall be submitted for approval by the Comhairle. No part of the development to which this permission relates shall commence until the Comhairle has issued approval of the details in writing. The development shall then be carried out and retained throughout the life of the development in compliance with the approved details unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In the interests of the visual amenity of the area.

**Condition 10** The Construction Method Statement referred to in Condition 3 shall include and comply with the terms of Conditions 19-43 listed below. No part of the development to which this permission relates shall commence until the Comhairle, in consultation with the Environmental Management Committee has issued approval of the Construction Method Statement. The development shall then be carried out and retained throughout the life of the development in compliance with the approved details unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In order to ensure proper management of the development.

**Condition 11** The Outline and Final Decommissioning and Restoration Management Plans shall be submitted to and approved by the Comhairle as planning authority as agreed in the Section 75 planning agreement. All decommissioning and restoration work shall be carried out in accordance with the approved plan to the satisfaction of the Comhairle.

*Reason* In order to ensure proper management of the development.

### **Management/ Monitoring**

**Condition 12** Arrangements shall be agreed between the applicant and Comhairle nan Eilean Siar for establishing an Environmental Management Committee and for the appointment of an ecologist; an archaeologist; Roads and Traffic Management Officer; and a planning conditions monitoring officer. No part of the development to which this permission relates shall commence until the Comhairle has issued approval of the arrangements in writing. The approved arrangements shall then be retained throughout the life of the development unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In order to ensure proper management of the development.

**Condition 13** In the event that any of the members of the Environmental Management Committee raise concerns in writing (which may include an email message) regarding the proposed works, or the implementation of the works, that cannot be resolved through discussion with the developer, such concerns should be considered at a meeting of the Environmental Management Committee that shall be called to take place no later than three working days from the submission of the written concern. Works that are the subject of the written concerns and are not in accordance with the Construction Method Statement shall not take place or continue until the Comhairle has indicated in writing. Thereafter such findings shall be followed unless the developer disagrees, in which case the developer may be heard by the relevant panel or committee of the Comhairle, the findings of which shall be final (without prejudice to any right of appeal against this condition).

*Reason* In order to ensure proper management of the development.

**Condition 14** The developer shall afford access on the site at all reasonable times to the archaeologist, ecologist and planning conditions monitoring officer appointed in accordance with Condition 12 above (and/or to their nominees) and shall allow them to observe work in progress and record items of interest and finds. Notification of the commencement date shall be given by the developer to the archaeologist, ecologist and planning conditions monitoring officer in writing not less than 14 days before development commences and, thereafter throughout the life of the construction works, a weekly written notification of the proposed programme of works for the following four weeks or for a period to be agreed beforehand in writing with the planning authority, shall be submitted to the archaeologist, ecologist and planning conditions monitoring officer. Any concerns raised by the archaeologist, ecologist and planning

conditions monitoring officer over the programme or methods of working shall, in the first instance, be referred to the developer and, if not resolved by mutual agreement, shall be referred to the Environmental Management Committee whereafter the procedures outlined in Condition 11 above shall apply.

*Reason* In order to ensure proper management of the development and proper recording and protection of items of archaeological or ecological interest.

**Condition 15** Before development commences on site, details of a scheme for monitoring the impact of the development on birds shall be submitted for the written approval of the Comhairle in consultation with SNH and the RSPB. Such monitoring shall include regular recording of bird strike casualties in particular. An annual report, over the first three years of operation summarising the results of monitoring, shall be submitted to the Comhairle in consultation with the Environmental Management Committee for consideration and for suggestions for any remedial, mitigation or compensation action.

*Reason* In order to establish effective monitoring in the interests of ornithology.

**Condition 16** Before development commences on site, details of a scheme to mitigate against potential adverse impacts on white-tailed eagles shall be submitted for the written approval of the Comhairle in consultation with SNH and the RSPB. Such measures shall be retained throughout the life of the development unless otherwise agreed in writing by the Comhairle.

*Reason* In order to minimise any effect on the white-tailed eagles.

**Condition 17** Details of the method for monitoring design and construction of site roads and clarification of the observational method shall be submitted (The Observational Method in ground engineering is a continuous, managed, integrated, process of design, construction control, monitoring and review that enables previously defined modifications to be incorporated during or after construction as appropriate. All these aspects have to be demonstrably robust. The objective is to achieve greater overall economy without compromising safety - CIRIA Report 185).

*Reason* In order to ensure proper management of the development.

**Condition 18** Every 5 years from the date of commencement referred to in Condition 2, a report shall be submitted to the Comhairle reviewing the operational arrangements and controls of the development.

*Reason* In order to ensure the application of the most appropriate environmental controls in the interests of amenity.

## **Construction Methods**

### ***Roads/Transportation***

**Condition 19** The route of new tracks should be pegged out well ahead of construction operations, at least 500m in advance of required operations and shall be inspected and approved by the on site ecologist and the Comhairle in consultation with the Environmental Management Committee before construction of the relevant section proceeds. Construction of the relevant section shall then only proceed following approval of the line and methods by the Comhairle.

*Reason* In order to ensure proper management of the development in the interests of the habitat, fauna and fisheries.

**Condition 20** Prior to the commencement of development the working areas, including the new access roads, shall be taped off or otherwise demarcated to ensure that no vehicle movements take place across the peatlands outwith the working area.

*Reason* to ensure site ground disturbance is kept to a minimum in the interests of nature conservation.

**Condition 21** All parking associated with the construction and maintenance of the site shall be accommodated within the areas demarcated as working areas / compounds unless otherwise agreed in writing with the Comhairle as Planning Authority.

*Reason* to ensure site ground disturbance is kept to a minimum in the interests of nature conservation.

**Condition 22** Details of arrangements to be made to ensure no spread of mud or other materials onto the public highways shall be submitted for approval by the Comhairle.

*Reason* In order to ensure safety of traffic on the public highway

**Condition 23** Before any of the principal development commences, the developer shall carry out trial excavations of access tracks and turbine bases in a wet time of the winter and in locations to be agreed beforehand with the Comhairle, in consultation with the Environmental Management Committee, in order to fully assess potential difficulties and learn from any problems that arise. Any knowledge gained to reduce the environmental impact shall be incorporated into the Construction Method Statement and changes agreed in writing by the Comhairle as Planning Authority.

*Reason* In order to test and refine construction methodology in the interests of in the interests of the habitat, fauna and fisheries.

#### ***Rock Extraction***

**Condition 24** In respect to each of the rock source and batching plant areas, details of the proposed operation and restoration work shall be submitted to the Comhairle in consultation with the Environmental Management Committee. The submission will establish the following details at each rock source and batching plant area:

- a) Site set up, including details of any buildings, plant and machinery;
- b) Drainage, and management of site run off;
- c) Dust control methods;
- d) Overburden Storage;
- e) Extraction methods;
- f) Restoration plans, specifications, timescale and a ZVI diagram.

Restoration shall be undertaken in accordance with the terms and details approved following submission in accordance with f) above.

*Reason* In order to ensure proper planning control over the design and operation of the rock source/quarry areas.

#### ***Water / Drainage***

**Condition 25** A hydrological and hydro geological survey shall be carried out to determine the effects on the surface and ground waters supplying any public water supply or private water supply catchment areas together with a survey of the direct effects within such catchments.

*Reason* In order to ensure construction works do not harm water supplies.

**Condition 26** Details of foul drainage arrangements for all forms of permanent or temporary accommodation shall be submitted for approval by the Comhairle.

*Reason* In the interests of public health.

**Condition 27** Details of water supply arrangements, both during construction and subsequently, shall be submitted for approval by the Comhairle.

*Reason* In the interests of public health and to ensure protection of the local water supply system.

**Condition 28** A detailed drainage plan including a Drainage Impact Assessment shall be submitted for approval by the Comhairle.

*Reason* To ensure minimal impact on the site hydrology.

**Condition 29** Details of a method statement for discharges from dewatering operations shall be submitted for approval by the Comhairle, in consultation with the Environmental Management Committee. Such method statement shall require that no water from foundation dewatering operations shall be discharged directly into a watercourse. Where necessary, settling ponds and buffer strips shall be installed to remove sediment from pumped water. This statement shall include best practice in accordance with Scottish Environment Protection Agency's Advice.

*Reason* In order to ensure proper management of the development in the interests of the habitat, fauna and fisheries.

**Condition 30** Details shall be submitted for approval by the Comhairle, in consultation with the Environmental Management Committee, of the design, flow rates and likely effluent composition of the discharges from the cement batching compounds, the various proposed silt attenuation structures and any other discharges to the water environment and dilution available in receiving waters at low flow conditions for each of the proposed discharges.

*Reason* In order to prevent pollution and silting in the interests of the habitat, fauna and fisheries.

### ***Pollution Control***

**Condition 31** Details of Pollution prevention methods, taking account of SEPA's Guidance regarding use and design of oil interceptors and requiring provision of oil spill kits at fuel depots and on each on site vehicle shall be submitted for approval by the Comhairle.

*Reason* In order to prevent pollution in the interests of public health the habitat, fauna and fisheries.

### **Construction Time Limits**

**Condition 32** Unless agreed otherwise in writing beforehand by the Comhairle, Construction work, (including any form of quarrying, blasting, crushing or batching) shall take place only within the hours of 0700 to 1900 Mondays to Fridays and from 0700 to 12 noon on Saturdays and not at all on Sundays. Any construction activity involving audible noise at the nearest noise sensitive property, from cutting, hammering or welding shall be subject to the foregoing hours, unless specific exceptions have received the prior approval of the Comhairle as Planning Authority in writing.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

**Condition 33** Unless agreed otherwise by the Comhairle (for example under the terms of the Transportation Management Plan) throughout the life of the development to which this permission relates, access to the site by heavy goods vehicles shall be restricted to the access to the site (1 km to the west of Tabost on the B8060) and from 0700 to 1900 on Mondays to Fridays and from 0700 to 12 noon on Saturdays with no such access on Sundays.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

### **Construction Noise**

**Condition 34** Details of the location and methods for any blasting operations (to include a method statement from a qualified shot blaster) which are to be undertaken in any part of the development are to be submitted to and approved by the Comhairle. Any blasting on the site shall be undertaken in accordance with the details approved in compliance with this condition unless agreed otherwise in writing with the Comhairle.

*Reason* In order to safeguard birds, fish and other fauna and the safety and amenities of people and structures in the area.

**Condition 35** Details of the methods and locations for measuring any blasting which is to be undertaken to prepare the site shall be submitted for approval by the Comhairle.

*Reason* In order to safeguard birds, fish and other fauna and the safety and amenities of people and structures in the area.

**Condition 36** Following compliance with conditions 34 and 35, the results of the first blast shall be referred to the Comhairle as planning authority and no further blasts shall be undertaken until the planning authority has indicated in writing that it is satisfied with the blasting methods being used, whereafter blasting shall continue in accordance with these methods throughout the period of blasting to the satisfaction of the Comhairle.

*Reason* In order to safeguard birds, fish and other fauna and the safety and amenities of people and structures in the area.

**Condition 37** Noise from activities involved in the construction of the development hereby permitted shall be limited to a level of 55 dB  $L_{Aeq\ 10hr}$  at any time at any residential property. Providing that this condition shall only apply to dwellings or other Noise Sensitive Premises existing at the date of this Permission.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

**Condition 38** Unless otherwise specified below, all construction activities shall be undertaken in accordance with good practice as set out in BS5228 (1997) Noise and Vibration Control on Construction and Open Sites.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

**Condition 39** At the request of the Comhairle as Planning Authority, following a valid complaint to the Comhairle relating to noise emissions from the construction phase, the developer shall measure, at its own expense, the level of noise emissions from the site, by the methodology in Annex E of BS 5228 (1997) Noise and vibration control on construction and open sites.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

### **Site Reinstatement**

**Condition 40** Details of the reinstatement of the wind turbine plinths and the hardstandings for the crane required in connection with the turbine foundations; and details of the reinstatement of land disturbed by the insertion of underground cables shall be submitted for approval by the Comhairle in consultation with the Environmental Management Committee. Such details shall include provision for the surface of each tower base to be at least 0.5m below adjacent land surface levels and shall include for reinstatement of the edges of the access tracks to leave them at the minimum width needed to allow necessary service access during the operational period. The details to be submitted shall also include the size of the operating area around plinths, storage of removed peat/soil and type of crane hardstanding to be formed and details of the vegetation types to be used. Such reinstatement shall be carried out up to the base mounting and retained throughout the life of the development in compliance with the approved details.

*Reason* To reduce the impact of the proposed development into the surrounding landscape in the interests of nature conservation and visual amenity.

**Condition 41** The approved reinstatement shall be carried out in accordance with the approved scheme referred to in Condition 40 and shall be carried out progressively for each turbines within 12 months of commissioning of the turbine unless any variation of the approved scheme has been agreed in writing by the Comhairle as planning authority beforehand. The approved reinstatement scheme shall then be maintained throughout the life of the development.

*Reason* In order to ensure the implementation of the approved landscaping in the interests of the amenity of the area.

**Condition 42** All land disturbed by the insertion of underground cables shall be reinstated within six months of completion of the said works to the satisfaction of the Comhairle as planning authority in consultation with the Environmental Management Committee.

*Reason* In the interests of visual amenity and nature conservation.

**Condition 43** All compound, laydown and materials storage areas shall be constructed with a geotextile or geogrid base unless agreed otherwise beforehand in writing with the Comhairle. Prior to the creation of any such areas full details for their restoration shall be agreed in writing with the Planning Authority, in consultation with the Environmental Management Committee. Within six months of turbines becoming operational, all temporary buildings, containers, machinery and equipment shall be removed and the temporary compound/laydown area and materials storage area shall be fully restored to the satisfaction of the Comhairle in consultation with the Environmental Management Committee.

*Reason* In the interests of visual amenity and nature conservation

## Noise

**Condition 44** The Wind Farm Operator shall log wind speed and wind direction data continually and shall retain the data, which has been obtained for a period of no less than the previous 12 months. The data shall include the average wind speed in metres per second for each 10-minute period. The measuring periods shall be set to commence on the hour or in 10-minute increments thereafter. The wind speed data shall be made available to the Comhairle as Planning Authority on request. The data shall be provided on a Microsoft Excel spreadsheet in electronic format. In the case where the wind speed is measured at a height other than at 10m, the data shall be supplemented by adjusted values, which allow for wind shear, normalised to 10m height. Details of the wind shear calculation shall be provided.

*Reason* To provide information necessary for accurate assessment of noise impact.

**Condition 45** At wind speeds not exceeding 12m/s, as measured or calculated at a height of 10m above ground level at the nearest wind monitoring mast; the wind turbine noise level at any dwelling or other noise sensitive premises shall not exceed:-

- (a) during night hours, 38dB LA90,10min, or the Night Hours LA90,10min Background Noise Level plus 5dB(A), which ever is the greater;
- (b) during Quiet Waking Hours, 35dB LA90,10min or the Quiet Waking Hours LA90,10min Background Noise Level plus 5 dB(A), which ever is the greater.

In this condition,

**“wind turbine noise level”** means the rated noise level due to the combined effect of all the wind turbines, excluding existing background noise level but including any tonal penalty incurred under the methodology described in ETSU-R-97, pages 99-109.

**“Background Noise Level”** means the ambient noise level already present within the environment (in the absence of noise generated by the development) as measured and correlated with Wind Speeds.

**“wind speeds”** means wind speeds measured or calculated at a height of 10 metres above ground level on the wind farm site at the wind monitoring mast nearest to the premises of interest by reference to Figure 3 of the Farr Wind Farm, Environmental Statement, Volume 3, Volume of Figures, September 2002.

**“Night Hours”** means 23:00 – 07:00 hours on all days.

**“Quiet Waking Hours”** means 18:00 – 23:00 hours on all days, plus 07:00 – 18:00 on Sundays and 13:00 – 18:00 hours on Saturdays.

**“Noise Sensitive Premises”** means premises, the occupants of which could be exposed to noise from the wind farm and includes hospitals, residential homes, nursing homes, etc.

*Reason* To protect the amenity at noise sensitive premises.

**Condition 46** At the request of the planning authority, following a valid complaint to the planning authority relating to noise emissions from the wind turbines, the company shall measure, at its own expense the level of noise emissions from the wind turbines. The measurement and calculation of noise levels shall be undertaken in accordance with “The Assessment & Rating of Noise from Wind Farms”, September 1996, ETSU report number ETSU-R-97 having regard to paragraphs 1-3 and 5-11 inclusive, of the Schedule, pages 95 to 97; and Supplementary Guidance Notes to the Planning Obligation, pages 99 to 109.

*Reason* To quantify the loss of amenity at noise sensitive premises resulting from the operation of the windfarm.

**Condition 47** Should the noise levels in the foregoing condition be exceeded, the company shall take steps to ensure that noise emissions from the wind farm are reduced to the aforementioned noise levels or less.

*Reason* To ensure adequate mitigation is in place to protect amenity at noise sensitive premises.

### Archaeology

**Condition 48** No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation ("*the Scheme*") which has been submitted by the applicant and approved by the planning authority. The Scheme shall specify the appointed archaeological contracting company, their staffing and qualifications, and set out measures for the preservation, interpretation and recording of archaeological remains on the application site and, as a minimum shall make provision for the following:

- (i) An advance 10% evaluation on top soil/peat strip in all excavated areas below 250 metres AOD, including cabling, access tracks, borrow pits, crane hardstandings, turbine bases, sub-stations and any other ground disturbance works.
- (ii) Advance 10% evaluation of the area of any development within 20m of the visible edge of any archaeological remains regardless of elevation AOD.
- (iii) Provision for the excavation of identified sites, or preservation in situ and appropriate re-routing/relocation of elements of the development as appropriate.
- (iv) A full watching brief on all remaining unexcavated areas of ground disturbance.
- (v) Provision for the paleoenvironmental sampling of any basins located during the stripping of top soil/peat, an appropriate sampling for other purposes, including but not limited to, dating, species identification and soil micromorphology.
- (vi) Provisions for establishing, staffing and funding the appointment of an archaeologist within the Comhairle, to monitor the implementation of the Scheme.
- (vii) The recording of archaeological remains which are not to remain in situ and the disposal of finds via the Scottish Archaeological Finds Allocation Panel as required by law.
- (viii) Appropriate arrangements for the publication of results of the archaeological work.

*Reason* In order to protect cultural heritage

**Condition 49** No development shall take place until fencing has been erected, in a manner to be agreed with the planning authority, to protect identified sites of archaeological importance which may be near the development during construction and no works shall take place within the area inside that fencing without the prior agreement of the planning authority.

*Reason* In order to protect cultural heritage

**Condition 50** The developer shall afford access at all reasonable times to the Comhairle's Archaeologist or such other archaeological organisation acceptable to the planning authority and to the archaeological officer appointed pursuant to the Scheme, and shall allow them to observe work in progress and record items of interest and finds. Information as to whom the Comhairle's Archaeologist or other archaeological organisation should contact on site shall be given to the planning authority in writing not less than 14 days before development commences.

*Reason* *In order to protect cultural heritage*

### **Contaminated Land**

**Condition 51** An investigation of the site shall be undertaken to establish the nature and extent of any contamination of the site and any necessary remedial works to deal with the contamination. This shall consist of a desk study and risk assessment that complies with BS 10175: 2001; which is current best practice to determine which areas should be targeted in the site investigation and updated risk assessment submitted once the site investigation has taken place. The desk study and site investigation shall consist of separate reports although the site investigation report may include the remediation proposals. No development shall commence until the written approval of the findings and proposed remedial works has been given by the Comhairle as planning authority. The approved remedial works shall then be completed before any of the approved development commences unless agreed otherwise in writing by the Comhairle as planning authority.

*Reason* *In the interests of habitat, fauna, fisheries and public health .*

### **Decommissioning and Restoration**

**Condition 52** Within six months of the cessation of regular use of any of the wind turbines, such turbine(s), associated hardstanding, any other fitments associated with the development shall be removed and the site restored in accordance with the approved Decommissioning and Restoration Management Plan, unless otherwise agreed in writing with the Comhairle. In the event of the cessation of regular use of all of the wind turbines in any of the identified groups of turbines, any meteorological masts associated with such groups shall also be removed and the site restored in accordance with the approved Decommissioning and Restoration Management Plan. For the purpose of definition, "*the cessation of regular use*" shall be defined as not being in use for a continual period of six months.

*Reason* *In order to safeguard the natural qualities of the site.*

### **Other**

**Condition 53** The access tracks to, and all areas around, the turbine bases shall remain unfenced unless agreed to in writing before hand by the planning authority.

*Reason* *In order to retain open access.*

**Condition 54** No symbols, signs, logos or other lettering (other than those required for health and safety reasons) shall be displayed on any part of the turbines nor any other buildings or structures without the written consent of the Comhairle.

*Reason* *In order to minimise the visual impact of the proposals in the interests of visual amenity.*

**Condition 55** Throughout the life of the development any extraneous spoil produced in the course of the development shall be tipped only in locations that have previously been agreed in writing as part of the Construction Method Statement with the Comhairle in consultation with the Environmental Management Committee.

*Reason* in the interests of visual amenity and nature conservation.

**Condition 56** Throughout the life of the development turbine blades shall rotate in the same direction.

*Reason* In the interests of safety and visual amenity.

**Condition 57** No generation of electricity to the grid from the development hereby permitted shall take place until a scheme has been submitted to, approved in writing by and deposited with the Comhairle as planning authority providing for the remediation of any interference to domestic television reception or mobile phone/microwave fixed links caused by the operation of the turbines (such remediation to be at the cost of the Company). The approved scheme shall thereafter be implemented and retained throughout the life of the development to the satisfaction of the Comhairle as planning authority.

*Reason* In the public interest.

**Condition 58** Before any development commences the following Management Plans shall be submitted to and approved by Comhairle nan Eilean Siar:

- **Transportation Management Plan (including off-site works schedule).**
- **Housing Management Plan.**
- **Construction Method Statement.**
- **Outline Decommissioning and Restoration Management Plan.**
- **Public Health Management Plan.**
- **Otter Management Plan.**

*Reason* These details are required to allow Comhairle nan Eilean Siar to properly assess and control the proposed development in the public interest.

**Condition 59** No part of this development to which this planning permission relates shall commence until details of measures to be followed for the suppression of dust during construction of any part of the development have been submitted to and approved by Comhairle nan Eilean Siar. The approved measures shall then be implemented before development starts and shall be retained throughout construction to the satisfaction of Comhairle nan Eilean Siar.

*Reason* In the interests of the health, safety and amenity of people in the vicinity.

**Condition 60** No part of this development to which this planning permission relates shall commence until details of measures to be followed for the protection of the wholesomeness and sufficiency of the private water supplies within the site have been submitted to and approved by Comhairle nan Eilean Siar. The approved measures shall then be implemented before development starts and shall be retained throughout construction to the satisfaction of Comhairle nan Eilean Siar.

*Reason* In the interests of public health and in order to ensure that the private water supplies are protected both in terms of wholesomeness and sufficiency..

**Condition 61** Before the wind turbines hereby approved become operational, a lighting scheme for the installation of obstruction lights shall be submitted to and approved, in consultation with the Civil Aviation Authority by Comhairle nan Eilean Siar. The approved scheme shall be retained throughout the life of the development to the satisfaction of Comhairle nan Eilean Siar.

*Reason* *In the interests of air traffic safety.*



Lesley Mcneil  
The Scottish Government  
Energy and Telecommunications Division  
Meridian Court  
5 Cadogan Street  
GLASGOW  
G2 6AT

Your Ref:  
Our Ref: CNS/REN/WF/PAIRC/B359894  
Date: 6 April 2009

Dear Ms Mcneil

**ELECTRICITY ACT 1989  
THE ELECTRICITY WORKS (ENVIRONMENTAL IMPACT ASSESSMENT) (SCOTLAND) REGULATIONS  
2000, SECTION 36 ADDENDUM TO THE APPLICATION FOR THE PROPOSED PAIRC WINDFARM, ISLE  
OF LEWIS, NORTH HARRIS MOUNTAINS SPECIAL PROTECTION AREA (SPA), LEWIS PEATLANDS  
SPA & RAMSAR SITE**

Thank you for your consultation dated 4 February 2009 and accompanying Environmental Statement Further Information (ESFI) relating to the above application.

The proposal consists of 26 wind turbine generators, each with a typical capacity of up to 3.6MW; each one 90m to hub height, with rotors 110m in diameter giving a total height to blade tip of 145m; crane pads and foundations, construction compound and laydown area, up to 6 borrow pits, 20km of tracks, 3 permanent anemometer masts, control buildings and sub-stations and 18km of buried 33kV cable.

**SNH POSITION**

**SNH reserves its position in relation to impacts upon the protected bird species white-tailed eagle, reathroated diver and black-throated diver. Reasons for this are at section 2 below.**

**SNH objects to the proposed windfarm development on grounds of impacts on the European Protected Species (EPS) otter, unless specified measures are incorporated into condition(s) of any consent issued. SNH's advice on impacts upon otters is provided at section 3 below.**

**SNH recommends particular measures to mitigate impacts upon peatland habitats. SNH's advice on impacts upon peatlands is provided at section 6 below.**

**1. SNH Advice in Relation to European Sites**

**LEWIS PEATLANDS SPA AND RAMSAR SITE**

The qualifying species for the Lewis Peatlands SPA are: golden eagle, merlin, red-throated diver, black-throated diver, golden plover, dunlin and greenshank. Please refer to the citation at Annex 1 for further details.

From the information available it appears to SNH that in this case the proposal is not connected with or necessary for the conservation management of the SPA. Hence, further consideration is required.

The proposal is situated some 3.5km from this SPA at the nearest point.

SNH considers that the predicted displacement of one breeding pair of golden eagle and/or the likely collision risk from the Pairc wind farm will not cause the NHZ population to move into unfavourable conservation status. There is therefore not likely to be a significant effect upon the SPAs designated for golden eagle in Lewis and Harris from this windfarm either alone, or in combination with other relevant windfarms, so that an appropriate assessment of the implications for the Lewis Peatlands SPA's conservation objectives is not required.

**NORTH HARRIS MOUNTAINS SPA**

The qualifying species for the North Harris Mountains SPA is golden eagle. Please refer to the citation at Annex 1 for further details.

From the information available it appears to SNH that in this case the proposal is not connected with or necessary for the conservation management of the site. Hence, further consideration is required.

The proposal is situated some 18.5 km from this SPA at the nearest point.

SNH considers that the predicted displacement of one breeding pair of golden eagle and/or the likely collision risk from the Pairc wind farm will not cause the NHZ population to move into unfavourable conservation status. There is therefore not likely to be a significant effect upon the SPAs designated for golden eagle in Lewis and Harris from this windfarm either alone, or in combination with other relevant windfarms, so that an appropriate assessment of the implications for the North Harris Mountains SPA's conservation objectives is not required.

## **2. SNH's Advice in Relation to Protected Birds**

Usage of the site by white-tailed eagles has changed significantly since the data used in the ESFI was collected. SNH therefore considers that the collision risk presented for this species is unlikely to be representative. The ES does not clarify the degree of impacts upon this species at the Natural Heritage Zone (NHZ) level, neither has a cumulative impact assessment been presented. SNH therefore cannot be confident that impacts upon this species will be of low significance, as claimed in the ES. SNH therefore **reserves our position** in relation to the impacts of this proposal upon white-tailed eagles.

SNH considers that the proposed development by itself will not cause the population of the Annex 1 (of the Birds Directive) species golden eagle in the Western Isles NHZ to move into unfavourable conservation status. At 14.75 predicted mortalities over the life of the windfarm, the collision mortality arising from the Pairc windfarm is well below the threshold (30 – 35 birds above natural mortality levels) which the Golden Eagle Population Model predicts would lead to a decline in the NHZ population.

Cumulatively with other relevant windfarms, impacts from collision mortality are still (28 birds) below the above population model threshold. There is also likely to be the displacement of one golden eagle range due to the loss of c.31% of its available range to the combined effect of the Pairc and Muaitheabhal / Feiriosbhal windfarms. SNH therefore considers that the impacts upon the Western Isles golden eagle population, while of a significant magnitude, will not cause the population to decline into unfavourable conservation status.

The information submitted does not remove uncertainty about the effects on the NHZ population of either of the Annex 1 species red-throated diver or black-throated diver. A better assessment is required to address this. SNH therefore **reserves its position** regarding these species pending information being provided which gives greater confidence regarding the degree and significance of impacts on their NHZ populations.

SNH's position in relation to golden eagles and the SPAs is drawn from the predicted collision mortality using our revised recommended avoidance rate of 99%. The figures presented in the ESFI use the 98% avoidance rate which was still current when the ESFI was submitted.

For further details on our assessment of the impact on birds, please refer to Annex 3.

## **3. SNH's Advice in Relation to European Protected Species (EPS) – Otter**

The ESFI makes no reference to impacts upon otters. Blanket bog and associated lochs/streams in the location of the proposed development may provide important resting sites and/or breeding sites for otter. The original ES identified a number of potential adverse impacts on otter including pollution events, loss of habitat, impacts on fish and increased risk of mortality from road traffic. SNH is satisfied that the mitigation measures specified in the ES, together with some additional measures we have set out in Annex 6 of our response of 27 August 2007, should be sufficient to mitigate these impacts. However we note that these recommendations, originally given in our advice of August 2007, have not been committed to in the current ESFI. SNH therefore **objects** on grounds of impacts on otter, **unless the following measures are incorporated into conditions of a consent**:

- The appropriate licensing procedures are followed where it is considered necessary to work in the vicinity of a holt or resting place.
- Measures specified in the ES to mitigate impacts on otters are implemented.
- Mitigation measures for otter are implemented on additional watercourses specified by SNH in Annex 6 of our response of 27 August 2007, insofar as these sites continue to feature in the revised layout.
- Appointment of an on-site ecologist, such appointment, duration and terms to be approved in advance by SNH.

Details of the legal situation which applies to European Protected Species are given in Annex 5.

## **4. SNH's Advice in Relation to Designated Landscapes**

The proposal would adversely affect some views from within the South Lewis, Harris and North Uist National Scenic Area to surrounding landscapes and vice versa. SNH considers however that the qualities and character of the NSA would not be adversely affected. Hence SNH does **not object** to the proposal based upon indirect impacts to the NSA.

## 5. SNH's Advice in Relation to Landscape and Visual Amenity

It is SNH's view that this windfarm would still result in some significant adverse landscape and visual impacts. However clear improvements have been made to the proposal in reducing the spread and visually dislocated array of turbines of the original layout.

There would be cumulative landscape and visual impacts associated with the consented Feirosbhal windfarm and this proposal. The applicant has not undertaken a cumulative landscape and visual assessment which specifically considers the consented Feirosbhal windfarm.

For further details on SNH's assessment of the impact on landscape, please refer to Annex 6.

## 6. SNH's Advice in Relation to Peatland

SNH does **not object** to the proposed development on account of the impacts upon blanket bog, a priority habitat listed on Annex 1 of the Habitats Directive. However, SNH **recommends** incorporating specified measures as conditions of any consent, in order that residual impacts can be further reduced. Specifically, SNH recommends that the following are incorporated as conditions of any consent:

- Agreed Construction Methods Statements;
- The development of an agreed Habitat Management Plan;
- The development of an agreed Peat Management Plan;
- Employment of a Geo-technical Engineer;
- Employment of an Ecological Clerk of Works.

Further comments on peatland habitats can be found at Annex 7.

## 7. SNH Advice in Relation to Freshwater

SNH has **no objection** to the proposal due to impacts upon freshwater interests.

## 8. SNH Advice in Relation to Recreation and Access

SNH does **not object** to the proposal in relation to its impacts upon recreation and access. The proposal would have a high localised adverse impact during construction and SNH recommends that measures to minimise some of these adverse impacts should be explored, together with opportunities to enhance access and recreational provision in the longer term.

As with all applications which are subject to an objection from SNH, we ask to be advised at the earliest possible stage about any proposed modifications, conditions or agreements relevant to our interests.

Please let me know if you need any further information or advice from SNH in relation to this proposal. I would be grateful if you could let us know of your decision in due course.

Yours sincerely

Susan Davies  
Director, Operations North

Encs

CC Keith Bray, Head of Development Services  
Chris Marden, Scottish & Southern Energy

## ANNEX 1

### EC Directive 79/409 on the Conservation of Wild Birds

#### CITATION FOR SPECIAL PROTECTION AREA (SPA)

#### THE LEWIS PEATLANDS

#### WESTERN ISLES (UK9001571)

##### Site Description:

The Lewis Peatlands Special Protection Area (SPA) site contains a large proportion of the blanket bog on the Isle of Lewis. Blanket bog is rare in world terms and Britain has a significant proportion of the total world resource. Within Britain, the Lewis Peatlands are second in extent only to the Caithness and Sutherland peatlands and represent the extreme north-west part of the range of variation. Associated with these peatlands and open water is a unique and diverse assemblage of breeding birds that is of international importance.

##### Qualifying Interest:

The Lewis Peatlands SPA qualifies under **Article 4.1** by supporting **nationally important populations of five Annex I bird species** identified as of special priority for conservation. These are: red-throated diver *Gavia stellata* (80 pairs, 9% of the British breeding population of this species), black-throated diver *Gavia arctica* (13 pairs, 8% of British), golden eagle *Aquila chrysaetos* (5 pairs, 1% of British), merlin *Falco columbarius* (20 pairs, 2% of British), and golden plover *Pluvialis apricaria* (1,800 pairs, 8% of British).

The SPA also qualifies under **Article 4.2** by supporting **important populations of two migratory species**, an internationally important breeding population of dunlin *Calidris alpina* (3,400 pairs, 37% of GB and 31% of the World population of the temperate *schinzii* race); and a breeding population of greenshank *Tringa nebularia* which is considered of special importance in a British context (140 pairs, 10% of British).

Area: 58,984.23 ha

OS 1:50,000 sheets 8,13 and 14

Scottish Natural Heritage

Classified 7 December 2000

## Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat

### CITATION FOR RAMSAR SITE (Montreux criteria, 1990)

#### 8 THE LEWIS PEATLANDS

##### WESTERN ISLES (7UK147)

The Lewis Peatlands Ramsar site contains a large proportion of the blanket bog on the Isle of Lewis. Blanket bog is rare in world terms and Britain has a significant proportion of the total world resource. Within Britain, the Lewis Peatlands are second in extent only to the Caithness and Sutherland peatlands and represent the extreme north-west part of the range of variation. Associated with these peatlands and open water is a unique and diverse assemblage of breeding birds that is of international importance.

The Ramsar site qualifies under **Criterion 1b** by supporting one of the largest and most intact known areas of blanket bog in the world. It includes extensive areas of ombrotrophic or rain-fed bog together with numerous, smaller areas where the peatland lies in depressions and is subject to a flow of water carrying nutrients dissolved from rock and mineral soil. These latter areas support a more species-rich flora characterised in particular by the relative abundance of sedge *Carex* species. One particularly characteristic feature of the Lewis Peatlands flora is the widespread occurrence of the woolly fringe moss *Racomitrium lanuginosum* which, in addition to its typical hummocks, forms extensive carpets, a niche which elsewhere is the preserve of species of *Sphagnum*. Surface patterns of the Lewis Peatlands though not exceptionally diverse are nonetheless an important feature of the area, and complement rather than replicate their mainland counterparts. They comprise round, deep pools on watersheds and level plains and linear, narrow pools separated by equally narrow ridges on the steeper slopes. Another significant aspect of the area is the extent and diversity of erosion features, even at relatively low altitudes. Elsewhere in the UK extensive blanket bog erosion is generally a feature of upland areas alone. The intimate association of these peatlands with numerous lochs and rivers, together with areas of wet heath and grassland, provides the diversity of habitats necessary to support a wide range of wetland and moorland species.

The Lewis Peatlands Ramsar site qualifies under **Criterion 2a** by supporting a number of rare species of wetland birds. There is a diverse population of breeding waterfowl including nationally important populations of red-throated diver *Gavia stellata*, black-throated diver *Gavia arctica*, golden plover *Pluvialis apricaria* and greenshank *Tringa nebularia*.

The Lewis Peatlands Ramsar site qualifies under **Criterion 3c** by supporting an internationally important breeding population of dunlin *Calidris alpina schinzii* (3,400 pairs, 31% of the World population of the temperate *schinzii* race).

Area: 58,984.23 hectares  
OS 1:50,000 sheets - 8, 13 & 14

Scottish Natural Heritage  
Designated 7 December 2000

## EC Directive 79/409 on the Conservation of Wild Birds

### CITATION FOR SPECIAL PROTECTION AREA (SPA)

#### NORTH HARRIS MOUNTAINS

#### WESTERN ISLES (157B)

##### Site Description:

The North Harris Mountains proposed SPA is part of a range of steep rocky hills on the west coast of Harris in the Western Isles. These mountains, composed of Lewissian gneiss and granite, rise from sea level to 729m. They have a strongly oceanic character with an abundance of wet heath, an abundance of Atlantic bryophytes including the large endemic moss *Campylopus shawii*, and numerous streams, oligotrophic lochs and dystrophic lochans. The boundary of the proposed SPA follows that of North Harris SSSI.

##### Qualifying Interest:

North Harris Mountains proposed SPA qualifies under Article 4.1 by regularly supporting a nationally important breeding population of golden eagle *Aquila chrysaetos*, an Annex 1 species. The site supports 6 – 7 pairs, representing over 1% of the GB population. This population has a high breeding productivity for the west coast of Scotland and is one of the highest density populations in Britain.

The site also supports a notable assemblage of breeding birds including Annex 1 species, such as red-throated diver *Gavia stellata*, black-throated diver *G. arctica*, merlin *F. columbarius*, golden plover *Pluvialis apricaria*, common tern *Sterna hirundo* and Arctic tern *S. paradisaea*, which are recognised by the EC as requiring special protection measures.

Area: 12,920.6 ha

Central Grid Ref: NB 065115

OS Sheet 1:50,000 - 13

## ANNEX 2

### Conservation Objectives for North Harris Mountains Special Protection Area

To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

#### Qualifying Species:

- Golden eagle (*Aquila chrysaetos*)

### Conservation Objectives for Lewis Peatlands Special Protection Area

To avoid deterioration of the habitats of the qualifying species (listed below) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and

To ensure for the qualifying species that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

#### Qualifying Species:

- Black-throated diver (*Gavia arctica*)
- Dunlin (*Calidris alpina*)
- Golden eagle (*Aquila chrysaetos*)
- Golden plover (*Pluvialis apricaria*)
- Greenshank (*Tringa nebularia*)
- Merlin (*Falco columbarius*)
- Red-throated diver (*Gavia stellata*)

## ANNEX 3

### LEGISLATIVE REQUIREMENTS FOR EUROPEAN SITES

1. The 'Lewis Peatlands' and 'North Harris Mountains' status as classified SPAs under the EC Directive 79/409/EEC on the Conservation of Wild Birds (the "Birds Directive"), means that the Conservation (Natural Habitats &c) Regulations 1994 (the "Habitats Regulations"), apply.

*"Regulation 48 requires 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".*

2. 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.
3. This advice is given to The Scottish Government as competent authority in its consideration of the following stages of the procedure required under Article 6.3 of the Habitats Directive and Regulation 48 of the Habitats Regulations, and laid out in Revised Circular 6/95 i.e. in order for The Scottish Executive 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.
4. SNH recommends that the first bullet should only be accepted where it is a part of a fully assessed, and agreed, management programme.
5. The competent authority can agree to the proposal 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 can include those of a social or economic nature.

## ANNEX 4

### ADVICE ON THE EFFECTS OF THE PAIRC WINDFARM PROPOSAL ON BIRDS

#### Golden Eagle

##### Flightlines & PAT Modelling (ESFI App 5.6)

1. It is unclear how flightlines have been assigned to particular pairs, therefore SNH has considered the flights as a whole. The flightlines presented match reasonably well with the PAT (Predicting *Aquila* Territory) modelling carried out. The area around Beinn Bhuidhe does appear to be a focal point of activity. It may well form the NE boundary of the pair 2 territory, leading to interactions with neighbouring pairs. The correlation of activity between observed and predicted usage in this area is highlighted in the PAT modelling assessment. Although not a high ridge as highlighted in Section 5 it is a prominent ridge in an open landscape and therefore attractive to eagles.
2. The PAT report also cautions against applying a 'global formula' from scientific literature for impacts on eagle range viability in this case especially, when considered in conjunction with the Muaitheabhal proposals that would affect pair 2 should they go ahead (Feiriosbhal is already approved). It should also be noted that the PAT model will not pick up preferred feeding areas, only observational data will do this; this is one of the reasons why absolute loss of area is not always the main driver for range abandonment or decreased productivity.
3. Up to 15.2% of the range of pair 2 would be lost due to the Pairc development alone, and consideration of the breeding performance of this territory should be taken into account when assessing whether such a loss of foraging area would allow this territory to remain viable. Information available from the Muaitheabhal/Feiriosbhal schemes suggests that the productivity in SE Lewis is generally on the low side for the Western Isles, with the high density of pairs, habitat quality and live prey availability the main reasons.
4. Whilst it is debatable as to whether this territory will be abandoned, due to Pairc alone, it will almost certainly impact on breeding performance. When the cumulative effect of Feiriosbhal is added on (up to 25.9% loss in Scenario 4 with 'Eisgen C' which is Feiriosbhal, and 31.7% when Eisgen B inc. in addition) then it is likely that this territory will be abandoned, as it is constrained by neighbouring pairs and the windfarms. Whitfield *et al* (2007)<sup>1</sup> have shown that for poor territories a loss of as low as 4% of foraging area has been enough to cause abandonment.

##### Use of a 'double weighted' mean

5. This method used by the developer does not really make mathematical sense, as an average of the two weightings has been applied. By taking the average between weights this effectively forces the 2 weights (area and time) to be the same for each vantage point (VP), the issue is then that time has been included for areas not watched, or areas have been included during periods when the watch was elsewhere. For example, if the weights for time and area were weights of 0.5 and 0.1 their combined weights become 0.3. An exaggerated example is presented below:-
6. We have three vantage point VP A observes 100ha for 40hrs, VP B observes 200ha for 20hrs and VP C observes 0.00000001ha (ie 1 cm<sup>2</sup>) for 1,000hrs.

VP	Area (ha)	Time (hrs)	Area Weighting (W <sub>a</sub> )	Time Weighting (W <sub>t</sub> )	Combined (=W <sub>a</sub> + W <sub>t</sub> /2)
A	100	40.0	0.33333	0.03774	0.1855
B	200	20.0	0.66667	0.01887	0.3428
C	0.00000001	1000.0	0.00000	0.94340	0.4717
Totals	300.00	1060.0	1	1	1.0

7. Clearly VP C's combined weighting of 0.4717 is disproportionate to the size of the area surveyed.

8. An acceptable method of weighting (and there are others) would be to weight by the number of hectare hours of observation. That is, for each VP the size of the area of observation is multiplied by the number of hours observation. This is then divided by the total number of hectare hours. You are effectively making the assumption that (i) the longer you survey an area then the greater the accuracy of that survey and (ii) the greater the area surveyed, then the more informative will that data be (as more flights will have been seen). For example, using the same parameters as above

VP	Area (ha)	Time (hrs)	HaHr	Weighting
A	100.00	40.00	4000	0.4999999994
B	200.00	20.00	4000	0.4999999994
C	0.00000001	1000.00	0.00001	0.0000000012
Totals	300.00	1060.00	8000.00001	1.0

9. When applying the above method of weighting to the calculation flight activity per hectare for golden eagle (all ages during breeding season), as per the worked example in Tables 5.1.3 and 5.1.4 of Appendix 5.1, would be

VP	Watch data		Flying time (s)	Flying time ha <sup>-1</sup> hr <sup>-1</sup>		Weighting	Weighted flying time
	Area (ha)	Time (hrs)	HaHr	Risk Area	Risk Area		ha <sup>-1</sup> hr <sup>-1</sup>
5	195.00	83.75	16331.25	961	1.63 E-05	0.169	2.77E-06
6	770.00	44.38	34172.6	1772	1.44 E-05	0.354	5.10E-06
7	81.00	81.00	6561	86	3.64 E-06	0.068	2.48E-07
8	484.00	81.50	39446	1049	7.39 E-06	0.409	3.02E-06
Totals	1530.00	290.6	96510.85	3868	1.04 E-05	1.0	1.11E-05

10. Whilst the resultant figure of occupancy, above, is very close to that derived in Table 5.1.4, i.e.  $1.11 \times 10^{-5}$  versus  $1.09 \times 10^{-5}$ , this is **due more to luck than design**.

#### Eagle season length

11. The assumption in paragraph 5.8.1 (App 5.1) is wrong. We do not assume that eagles are aloft for all this time, we assume that eagles have the opportunity to be aloft at any time during daylight hours, this is fundamentally different. Furthermore, applying a correction factor of 25% to total available hours is inappropriate.
12. The survey design should implicitly take account of periods when eagles are not aloft during daylight hours. That is, a sample focal methodology has been applied, periods of inactivity by golden eagle will have been observed as well as periods of activity. When scaling up the observed results account is taken of the periods eagles were not active.
13. If the survey periods were sampled from 'all daylight hours' then you have to scale up using all daylight hours. In such a case, the observations will sample the 'hour after dawn' period when there may be few eagle flights; so excluding the hour after dawn in grossing up would be allowing for this twice over.

#### Turbine specification

14. Table 5.1.11 provides the turbine specifications. A value of 0° (zero degrees) is given for pitch. This is unrealistic, as turbines regulate their pitch to generate power depending on the wind speed. Generally, we accept a range of pitch between 5 – 20 degrees.
15. Also note in Table 5.1.5 that the rotor diameter is 110 meters and not 55m as stated.
16. Taking the above into consideration the revised probabilities of collision for the four species, based on a pitch of 15° are shown below;

	Black-throated diver	Red-throated diver	Golden eagle	White-tailed eagle
Probability of collision (%)	8.0	7.8	8.9	9.0

## REVISED COLLISION RISK ESTIMATES FOR GOLDEN EAGLE

### Model parameters

Golden eagle		Turbines		Wind Farm	
Bird Length	0.88	Number of Turbines	26	Area of turbine envelope and buffer	909ha
Wingspan	2.2	Blades per Turbine	3	Flight Risk Height	110m
Bird speed	14	Rotor Radius	55	Flight Risk Volume	999,900,000m <sup>3</sup>
Bird aspect ratio	0.44	Rotor depth	4.2	Combined Volume Swept by Rotors *(d+l)	1,255,198m <sup>3</sup>
Avoidance rate	0.98	Pitch	15	Proportion of 'at risk' band occupied by rotors	0.00125532
		Rotation Period	4.62		

### Collision Risk for golden eagle (adults breeding season)

17. **NB:** We have incorporated flights of unaged birds into the collision risk modelling (CRM) for adult golden eagle on a precautionary basis, as any impact upon the adult population would be greater than that upon the sub-adult population.

	Watch data			Flying time (s)	Flying time ha <sup>-1</sup> hr <sup>-1</sup>		Weighted flying time ha <sup>-1</sup> hr <sup>-1</sup>
VP	Area (ha)	Time (hrs)	HaHr	Risk Area	Risk Area	Weighting	Risk Area
5	195.00	83.75	16331.25	949	1.61E-05	0.169	2.73E-06
6	770.00	44.38	34172.6	1322 + 11	1.08E-05	0.354	3.84E-06
7	81.00	81.00	6561	82	3.47E-06	0.068	2.36E-07
8	484.00	81.50	39446	815	5.74E-06	0.409	2.35E-06
Totals	1530.00	290.6	96510.85	3169	9.05E-06	1.000	9.15E-06

18. To account for the fact that the recording height band was 10 – 100 meters and the height of the rotor risk area is 110m the results must be scaled up by a factor of  $(145 - 35) / (100 - 10) = 110 / 90 = 1.22$ , therefore the weighted activity per hour in area observed =  $909\text{ha} * 9.15 * 10^{-6} * 1.22 = 0.01016 = 1.016\%$  occupancy

Bird Transits Through Rotors		
Available hours / season		2,843.3 hrs
bird occupancy (n)	$1.016\% * 2,843.3 =$	28.90 hrs
seconds per year within volume swept by rotors	$28.90 * 0.00125532 * 3600 =$	130.61
duration of single transit through rotor	$(4.2 + 0.88) / 14 =$	0.36
transits through rotors	$130.61 / 0.36 =$	359.94
Collision risk from Band model		8.9%
annual collisions - no avoidance	$359.94 * 8.9\% =$	31.87
annual collisions - with avoidance (98%)	$31.87 * 1\% =$	0.32

19. **NB.** The calculation above assumes 100% operation, presenting a worst-case. Assuming 16% downtime the revised figure would be 0.27 collisions per breeding season.

**Golden eagle (adults non-breeding season)**

20. **NB:** We have incorporated flights of unaged birds into the CRM for adult golden eagle on a precautionary basis, as any impact upon the adult population would be greater than that upon the sub-adult population.

VP	Watch data			Flying time (s)	Flying time ha <sup>-1</sup> hr <sup>-1</sup>	Weighting	Weighted flying time ha <sup>-1</sup> hr <sup>-1</sup>
	Area (ha)	Time (hrs)	HaHr	Risk Area	Risk Area		Risk Area
5	195.00	54.00	10530	574	1.51E-05	0.126	1.91E-06
6	770.00	57.00	43890	882	5.58E-06	0.526	2.93E-06
7	81.00	54.00	4374	0	0.00E+00	0.052	0.00E+00
8	484.00	51.00	24684	1076 +134	1.36E-05	0.296	4.03E-06
Totals	1530.00	216.0	83478	2532	8.59E-06	1.000	8.87E-06

21. To account for the fact that the recording height band was 10 – 100 meters and the height of the rotor risk area is 110m the results must be scaled up by a factor of  $(145 - 35) / (100 - 10) = 110 / 90 = 1.22$ , therefore the weighted activity per hour in area observed =  $909\text{ha} * 8.87 * 10^{-6} * 1.22 = 0.00986 = 0.986\%$  occupancy

Bird Transits Through Rotors		
Available hours / season		1669.8 hrs
bird occupancy (n)	$0.986\% * 1669.8 =$	16.46 hrs
seconds per year within volume swept by rotors	$16.46 * 0.00125532 * 3600 =$	74.39
duration of single transit through rotor	$(4.2 + 0.88) / 14 =$	0.36
transits through rotors	$74.39 / 0.36 =$	205.00
Collision risk from Band model		8.9%
annual collisions - no avoidance	$205.00 * 8.9\% =$	18.15
annual collisions - with avoidance (98%)	$18.15 * 1\% =$	0.18

22. **NB.** The calculation above assumes 100% operation, presenting a worst-case. Assuming 16% downtime the revised figure would be 0.15 collisions per non-breeding season.

23. **Total collision mortality = 0.32 + 0.18 = 0.5 adults per annum or Assuming 16% downtime = 0.27 + 0.15 = 0.42 adults per annum**

**Collision Risk for sub-adult golden eagle (breeding season)**

VP	Watch data			Flying time (s)	Flying time ha <sup>-1</sup> hr <sup>-1</sup>	Weighting	Weighted flying time ha <sup>-1</sup> hr <sup>-1</sup>
	Area (ha)	Time (hrs)	HaHr	Risk Area	Risk Area		Risk Area
5	195.00	83.75	16331.25	11	1.87E-07	0.169	3.17E-08
6	770.00	44.38	34172.6	439	3.57E-06	0.354	1.26E-06
7	81.00	81.00	6561	4	1.69E-07	0.068	1.15E-08
8	484.00	81.50	39446	234	1.65E-06	0.409	6.73E-07
Totals	1530.00	290.6	96510.85	689	1.39E-06	1.000	1.98E-06

24. To account for the fact that the recording height band was 10 – 100 metres and the height of the rotor risk area is 110m the results must be scaled up by a factor of  $(145 - 35) / (100 - 10) = 110 / 90 = 1.22$ , therefore the weighted activity per hour in area observed =  $909\text{ha} * 1.98 * 10^{-6} * 1.22 = 0.00220$  = 0.220% occupancy

<b>Bird Transits Through Rotors</b>		
Available hours / season		2843.3 hrs
bird occupancy (n)	$0.220\% * 2843.3 =$	6.26 hrs
seconds per year within volume swept by rotors	$6.26 * 0.00125532 * 3600 =$	28.30
duration of single transit through rotor	$(4.2 + 0.88) / 14 =$	0.36
transits through rotors	$28.30 / 0.36 =$	77.98
Collision risk from Band model		8.9%
annual collisions - no avoidance	$77.98 * 8.9\% =$	6.90
annual collisions - with avoidance (98%)	$6.90 * 1\% =$	0.07

25. **NB.** The calculation above assumes 100% operation, presenting a worst-case. Assuming 16% downtime the revised figure would be 0.06 collisions per non-breeding season.

#### Collision Risk for sub-adult golden eagle (non -breeding season)

VP	Watch data			Flying time (s)	Flying time $\text{ha}^{-1} \text{hr}^{-1}$	Weighting	Weighted flying time $\text{ha}^{-1} \text{hr}^{-1}$
	Area (ha)	Time (hrs)	HaHr	Risk Area	Risk Area		Risk Area
5	195.00	54.00	10530	120	3.17E-06	0.126	3.99E-07
6	770.00	57.00	43890	9	5.70E-08	0.526	2.99E-08
7	81.00	54.00	4374	4	2.79E-07	0.052	1.46E-08
8	484.00	51.00	24684	199	2.24E-06	0.296	6.62E-07
Totals	1530.00	216.0	83478	332	1.44E-06	1.000	1.11E-06

26. To account for the fact that the recording height band was 10 – 100 meters and the height of the rotor risk area is 110m the results must be scaled up by a factor of  $(145 - 35) / (100 - 10) = 110 / 90 = 1.22$ , therefore

27. the weighted activity per hour in area observed =  $909\text{ha} * 1.11 * 10^{-6} * 1.22$   
= 0.00123 = 0.123% occupancy

<b>Bird Transits Through Rotors</b>		
Available hours / season		1669.8 hrs
bird occupancy (n)	$0.123\% * 1669.8 =$	2.05 hrs
seconds per year within volume swept by rotors	$2.05 * 0.00125532 * 3600 =$	9.26
duration of single transit through rotor	$(4.2 + 0.88) / 14 =$	0.36
transits through rotors	$9.26 / 0.36 =$	25.52
Collision risk from Band model		8.9%
annual collisions - no avoidance	$25.52 * 8.9\% =$	2.26
annual collisions - with avoidance (98%)	$2.26 * 1\% =$	0.02

28. **NB.** The calculation above assumes 100% operation, presenting a worst-case. Assuming 16% downtime the revised figure would be 0.02 collisions per non-breeding season.

29. Total collision mortality = 0.07 + 0.02 = 0.09 sub- adults per annum

or

30. Assuming 16% downtime = 0.06 + 0.02 = 0.08 sub- adults per annum

**COLLISION RISK TO GOLDEN EAGLE USING A 98% AND 99% AVOIDANCE RATE**

	No Avoidance	98% Avoidance	99% Avoidance
Adult	50.02	1.0 eagle per annum	0.5 per annum 1 eagle every 2 years
Sub-adult	9.16	0.19 per annum 1 sub-adult every 5.3 years	0.09 per annum 1 sub-adult every 10 years

**Collision Risk Modelling & Population Modelling**

- 31. SNH thus considers that the method employed by the developer is flawed and underestimates the risk. We believe that the collision risk is approximately 0.59 golden eagles (ads & imms)/annum which total 14.75 birds over the lifetime of the windfarm as a worst case scenario. With application of the downtime of 16% quoted this figure drops to 25.5 over the windfarm lifetime.
- 32. Using the Golden Eagle Population Model (GEPM) to assess this impact it is possible that the NHZ population could ‘take’ the mortality from the Pairc development, in isolation, without significant decline occurring. The cumulative assessment is complicated by the fact that pair 2 lies between the Pairc and Muaitheabhal/Feiriosbhal proposals and deaths of birds associated with this range will be recorded for both windfarms, producing an overestimate (although as a vacant territory it will attract eagles in); and by the collision risk figures not taking into account the effects from the proposed diver mitigation of turbine shutdown.
- 33. Cumulatively, we are now looking at an impact from collision risk amounting to around 28 birds in the Western Isles NHZ from projects proposed, approved or at planning application stage: Pairc (14.75); Muaitheabhal (11) – note Feiriosbhal is a subset of this site so not additional; Monan (1.12), Lochcarnan/lochdar Hill (1.5).
- 34. In the ESFI the cumulative impact prediction has not included Lochcarnan or Muaitheabhal. It predicts from population monitoring that the population would decline by 15% and argues that this could be within natural population fluctuations. However, the Western Isles population is known to be one of the most robust in Scotland and is increasing, with density dependence potentially kicking in in some parts. Therefore it is unlikely that natural population fluctuations are large, therefore we consider that the population may decline.
- 35. At 99% avoidance rate, and with our recalculation of the Pairc collision risk, cumulative collision mortality is a 28 birds over the lifetime of the development which close to, but below, the threshold for putting the population into decline. This leaves the golden eagle population vulnerable to any negative natural changes which may occur. Bearing in mind this is a model it would be prudent to include some buffering to allow some ‘floating’ birds to remain in the population to keep it favourable. This is explained in detail below (italicised paragraphs 36-68):
- 36. *The most important point, with respect to an impact assessment, is “does the population continue to expand?” after any additional mortality. However, the only parameters that we have much confidence in are the number of occupied ranges and the fledging rates. Even then these are largely historic (2003) data. Consequently, we think that the most defensible approach is to take the last known population size and fledging rates and then assume the minimum survival rates for a region which is in favourable conservation status.*

**GOLDEN EAGLE POPULATION MODELLING**

## Sub-adults

37. If there are 81 pairs in the NHZ and have a mean fledging rate of 0.33<sup>1</sup> the population should fledge, on average, 26.73 birds (81 x 0.33) per year or 668 over 25 years. Assuming that Whitfield et al's (2006) lower limit for favourable conservation status of 0.40 applies to pre-adult survival (PAS), this means that 10.7 of the fledged birds are expected to survive to age four. Over 25 years 401 of the 668 fledged birds are expected to die from 'natural' causes (**not 137**), leaving 267 survivors.
38. Therefore, the calculation (4), presented within Paragraph 5.2.4b: Sub-adult, is wrong as this only considers the natural mortality of 1<sup>st</sup> year eagles.
39. For example, number of chicks fledged = 81 x 0.33 = 26.73,  
 1. Number that survive to year 2 = 26.73 \* 0.795 = 21.25  
 2. Total number fledged = 26.73 x 25 = 668.25  
 3. Total number of 1<sup>st</sup> year survivor = 21.25 x 25 = 531.25  
 4. Total number of natural 1<sup>st</sup> year deaths = 668.25 – 531.25 = 137
40. Calculation (4) does not take account of the total number of natural deaths occurring in years 2, 3 and 4.
41. Similarly calculation (5) only considers collision mortality on 1<sup>st</sup> year birds. To calculate the effect upon pre-adult survival rates you would need to use the entire sub-adult population. An adjustment, made solely on the numbers of birds in each age class, must be applied.
42. If any additional mortality to sub-adults is cumulative to the natural rate the effects can be estimated by reducing the number of birds surviving to each age class. However, this is not a simple calculation because the impact of the death of a sub-adult bird depends on its age.
43. Put simply there are more 1<sup>st</sup> year birds than 4<sup>th</sup> year birds, therefore the probability of a 1<sup>st</sup> year bird colliding is higher, although it is also likely that the inexperience of younger birds could make them more susceptible.
44. We can calculate the proportion of each age class by their annual survival rate

Age	Proportion of 1 bird surviving to age 4	Proportion of each age class	Proportion of collision mortality for each age class
0 to 1	0.795	34%	0.030722
1 to 2	0.632	27%	0.024424
2 to 3	0.502	22%	0.019417
3 to 4	0.400	17%	0.015437
	2.329	100%	0.09

45. From the table above, we can now calculate the spread of collision mortality within each age class. In this calculation, a FR of 0.33 and a PAS of 0.40 are assumed. A PAS of 0.4 implies an annual sub-adult survival rate of 0.795. Predicted effect of losses of 0.19 sub-adults per annum are shown below.

<sup>1</sup> Whitfield, D P, Fielding, A H, McLeod, D R A and Haworth, P F. 2008. A conservation framework for golden eagles: implications for their conservation and management in Scotland. Scottish Natural Heritage Commissioned Report No.193 (ROAME No. F05AC306).

<b>Incorporating additional mortality</b>			
<b>Age</b>	<b>No wind farm</b>	<b>Calculation</b>	<b>Wind farm</b>
<i>Fledged</i>	26.73	= 26.73 - 0	26.73
0 to 1	21.26	= 21.26 - 0.030722	21.23
1 to 2	16.91	= 16.91 - 0.024424	16.88
2 to 3	13.44	= 13.44 - 0.019417	13.43
3 to 4	10.69	= 10.69 - 0.015437	10.68

46. Applying age class additional mortality estimates we can re-calculate annual survival rates for sub-adults, see below.

<b>Age</b>	<b>Annual survival - No wind farm</b>	<b>Annual survival incorporating additional mortality Calculation</b>	<b>Revised annual survival</b>
0 to 1	0.795	=21.23/26.73	0.794121
1 to 2	0.795	=16.88/21.26	0.794122
2 to 3	0.795	=13.43/16.91	0.794122
3 to 4	0.795	=10.68/13.44	0.794123
<b>PAS</b>	<b>0.4</b>		<b>0.397694</b>

47. In conclusion, an additional mortality rate of 0.09 sub-adults per annum lowers Pre-Adult Survival from 0.4 to 0.398.

#### **Adults**

48. Whitfield et al (2006)<sup>2</sup> suggested a minimum Pre-Adult Survival (PAS) of 40% survival from fledging to age four was required to achieve favourable conservation status. Whitfield et al (2004)<sup>3</sup> also estimated that, in the absence of interference, the Scottish golden eagle annual adult survival rate should be 94.2% – 95.8% (TR = 0.042 – 0.058). Consequently, Whitfield et al (2006) proposed an annual adult survival rate of 95.12% (20 years of territory occupation) as a minimum limit for favourable conservation status (TR = 0.0488).

49. Under these survival rates Whitfield et al (2008)<sup>4</sup> presents an **average reproductive rate of about 0.28 fledglings per pair per year** is required to maintain a stable population. It follows, however, that if these parameter values varied regionally then lower rates in one parameter could be compensated for, to a degree, by higher rates in another parameter. Due to survival rates having a greater influence on population dynamics of eagles than reproductive rates, a reduction in survival rate, for example, requires a large compensatory increase in fledging rate.

50. We can use the Golden Eagle Population Model (GEPM) to examine what the minimum survival rate combination (sub adult and adult) could be to give a stable population with a 0.33 reproductive rate. For the Western Isles NHZ it can be seen with a productivity rate (FR) of 0.33 that Pre-Adult Survival (PAS) may be as low as 0.30 with a range turnover (TR) of 0.040, or that with a Pre-Adult Survival

<sup>2</sup> Whitfield, D.P., Fielding, A.H., McLeod, D.R.A., Haworth, P.F. & Watson, J. 2006. A conservation framework for the golden eagle in Scotland: refining condition targets and assessment of constraint influence. *Biological Conservation*, **130**, 465-480.

<sup>3</sup> Whitfield, D.P., Fielding, A.H., McLeod, D.R.A. & Haworth, P.F. 2004. Modelling the effects of persecution on the population dynamics of golden eagles in Scotland. *Biological Conservation*, **119**, 319-333.

<sup>4</sup> Whitfield, D P, Fielding, A H, McLeod, D R A and Haworth, P F. 2008. A conservation framework for golden eagles: implications for their conservation and management in Scotland. Scottish Natural Heritage Commissioned Report No.193 (ROAME No. F05AC306).

(PAS) rate of 0.50 range turnover (TR) may be as low as 0.060, and a stable population is still maintained.

51. Clearly these 'minimum for survival' parameters are at two extremes and any natural (or for that matter unnatural) reduction in one or other could force the population into decline. Therefore, it is reasonable to assume that adult and sub-adult survival rates are somewhere in the middle of the two predicted 'minimum for survival' scenario's and those survival rates suggested by Whitfield et al required to achieve favourable conservation status, ie PAS = 0.4 and TR = 0.0488, are considered to be appropriate in this case.
52. If we assume the lowest rates for adult and sub-adult survival required to achieve favourable conservation status the effect of additional mortality upon the NHZ3 population can be investigated by simple arithmetic.

### **Effect of collision mortality**

53. Based on similar calculations above for sub-adults we can explore what the effect of a predicted collision mortality of 0.09 sub-adults per annum will have on pre-adult survival rates and apply this figure with a revised adult turn-over rate (TR) and productivity of 0.33 to see how the population is affected.
54. If PAS is 0.4, ie annual sub-adult survival rate of 0.795, an annual collision mortality of 0.09 reduces PAS to 0.398, see above for calculation.
55. If floaters are ignored the population of 81 pairs is made up of 162 adults. If the range turnover is 0.0488 this means that 7.91 adults (162 x 0.0488) are expected to die each year from natural causes. As the wind farm is predicted to kill 0.5 adult per annum this would increase the annual adult mortality from 7.91 to 8.41. The range turnover would increase from 0.0488 to 0.0519 (LE reduced from 20.49 to 19.27).
56. Based on the above revised survival parameters, with an adult survival rate of 0.948 (TR = 0.052), as long as at least 8.42 new adults arrive in the population per year it should remain stable. The NHZ fledge, on average, 26.73 birds per year, assuming the revised PAS of 0.398 applies, this means that 10.64 of the fledged birds are expected to survive to age four, leaving an excess of 2.22 adults that would enter the floating population per annum.

### **Conclusion**

57. When considered in isolation, the predicted loss of 0.5 adult and 0.09 sub-adults per annum, through collision with the Pairc windfarm, could be sustained by the NHZ.

### **CUMULATIVE ASSESSMENT**

58. Table 5.3.4 has been revised to incorporate the revised predicted collision mortality for Pairc, below

<b>Windfarm</b>	<b>No. turbines</b>	<b>No. adult eagle mortalities over 25 years</b>	<b>No. sub-adult eagle mortalities over 25 years</b>
Arnish Moor	3	0	0
Muaitheabhal	53	9	2
Monan	3	1	0.13
<b>Pairc</b>	<b>26</b>	<b>12.5</b>	<b>2.25</b>
Pentlands Rd	6	0	0
Lochcarnan/Lochdar	3	0	1.5
<b>Total</b>	<b>94</b>	<b>22.5</b>	<b>5.9</b>

59. If PAS is 0.4, ie annual sub-adult survival rate of 0.795, an annual collision mortality of 0.24 (5.9 / 25) reduces PAS to 0.394.

60. Cumulatively wind farms are predicted to kill 0.9 adults per annum (22.5 / 25), this would increase the annual adult mortality from 7.91 to 8.81 adults. The range turnover would increase from 0.0488 to 0.0544 (LE reduced from 20.49 to 18.40).
61. Based on the above revised survival parameters, with an adult survival rate of 0.9456 (TR = 0.0544), as long as at least 8.81 new adults arrive in the population it should remain stable. The NHZ fledge, on average, 26.73 birds per year, assuming the revised PAS of 0.394 applies, this means that 10.53 of the fledged birds are expected to survive to age four, leaving an excess of 1.72 adults that would enter the floating population per year.

### Conclusion

62. When considered in combination the predicted loss of 0.9 adults and 0.24 sub-adults per annum could be sustained by the NHZ, though the analysis above does not take account of any unexpected increases in natural mortality in both the adult and sub-adult populations and long-term decreases in productivity. **It is probably wise to be more precautionary and apply a suitable buffer to account for stochasticity in survival parameters and any decrease in NHZ productivity in the long-term – see below.**

### Applying a suitable buffer to account for stochasticity in demographic parameters

63. It is important that the GEPM is not over-interpreted when modelling a particular scenario. It is a tool used to predict trends in a population responding to changes in the populations demographics, thus the important point about the framework analyses is that it is the overall pattern rather than individual values which matter. In the Golden Eagle Framework papers, the results are presented for a range of survival values because the parameter values are too uncertain (or largely unknown) and how they vary across NHZ's. When the NHZ models were run, the aim was to see how robust the populations were, so the conservation status of each NHZ could be assessed.
64. Although the loss of future adults is independent of the fledging rates, the impact on the population is not. This is because there is a minimum requirement for new adults to replace natural adult mortality. In NHZ3, a TR of 0.0544 implies 220 natural deaths of range holding birds over 25 years. As long as at least 220 new adults arrive in the population it should remain stable.
65. However it is important to estimate how much 'spare capacity' exists in the population to understand the impacts of additional mortality on a population. The ability of a golden eagle population to buffer itself against changes in mortality is partly dependent on the number of 'floaters'. Populations of large raptors such as eagles, which are in a favourable status, usually contain a large number of non-breeding adults, or floaters (Hunt, 1998<sup>5</sup>; Kenward et al., 2000<sup>6</sup>). These adult floaters can rapidly replace adult breeders when vacancies arise in breeding territories. Consequently the population will not begin to decline if ranges become vacant. However, if there are few too floaters breeding territories may remain vacant, leading to a possible decline in productivity.
66. Therefore, it is probably wise to apply a safety margin of at least 1.5 – 2 additional adults (floaters) per year. Thus the minimum requirement, when considering the cumulative impact, is 258 - 271<sup>7</sup> new adults over 25 years. It is important to remember that birds enter an existing floater population and these birds can be expected to have a higher, natural, survival rate than younger birds. Therefore, the size of the floater population should be much larger than the 1.5/2 birds which enter it each year.

### Conclusion

<sup>5</sup> Hunt, W.G. 1998. Raptor floaters at Moffat's equilibrium. *Oikos*, **82**, 191-197.

<sup>6</sup> Kenward R.E., Walls, S.S., Hodder, K.H., Pahkala, M., Freeman, S.N. and Simpson, V.R., 2000. The prevalence of non-breeders in raptor populations: evidence from rings, radio-tags and transect surveys. *Oikos* **91**, pp. 271–279

<sup>7</sup> 220 birds lost is 8.81 per year (220/25). So, at least 8.81 eagles surviving to age 4 are needed for stability. However, to give a suitable buffer against unforeseen decreases in demographic parameters assume that the population needs 8.81 + 1.5 = 10.31 per year or 257.75 over 25 years. Or 8.81 + 2 = 10.81 per year or 270.25 over 25 years

67. *In isolation, based on  $FR = 0.33$ ,  $TR = 0.0519$  and  $PAS = 0.398$ , it is predicted that 2.22 adults will enter the floating population per year, providing borderline 'buffering' to the population, providing some comfort that the population should not go into decline.*
68. *In combination, based on  $FR = 0.33$ ,  $TR = 0.0544$  and  $PAS = 0.394$  it is predicted that 1.72 new adults will enter the floating population per year. Whilst new additional adults are still entering the population in this scenario, the figure is borderline; if any of the parameters used were to change significantly, then the population could go into decline.*
69. An additional factor here is the recent changes in the golden eagle population in the area. We are aware from RSPB that there are two additional 'new' pairs of golden eagle in the area since the ESFI fieldwork was completed in 2005, which would be potentially affected by the current turbine layout and its buffer zone (one approximately 4km NW of the northern turbines and one within 2km of the southern turbines). These two pairs are not included in the assessment, and their usage of the turbine envelope is not known.
70. The 2003 UK population estimate is incorrect it is 442 pairs, not 431.

#### **Lewis Peatlands and North Harris Montains SPAs**

71. The proposed Pairc windfarm will not directly affect breeding golden eagles in these SPAs because the breeding range over which adult breeding birds in the SPAs fly does not extend to the boundaries of the proposed development. However, the SPA breeding populations are sustained by eagles that are bred from nests throughout the Western Isles, because the SPA population of breeding golden eagles is not closed<sup>8</sup>. That means that a decline in productivity across the Western Isles as a whole (e.g. from losses of sub-adult and immature birds) will be felt by the whole breeding population in the Western Isles NHZ, including the population that breeds in the SPAs. Hence the potential for reduced recruitment could have an indirect, but adverse impact on the conservation status of golden eagles within SPAs, if, as a whole, the Western isles golden eagle population is producing insufficient numbers of potential recruits into the adult breeding population. All this assumes that the Western Isles golden eagle (NHZ) population is effectively closed (i.e. there is very little or no immigration into the Western Isles) from other parts of Scotland. In the case of the Western Isles, this is a reasonable assumption.

#### **White-tailed Eagle (WTE):**

72. The revised layout does take the turbines away from the coastal areas predominately used by the territorial pairs of WTE, thereby reducing the impact on this species, however, we are aware that one pair of WTE feed inland north of Beinn Eisgen outside the breeding season, as they rely heavily on fulmar in the breeding season (RSPB pers. comm.). Additionally, a regular roost involving several birds has been recently established in the Beinn Eisgen area within 2km of the southernmost turbine. Because of this information we consider that the collision assessment for WTE is not representative, notwithstanding the underestimation caused by the methodology employed (discussed under Golden eagle, above).
73. Additionally, no cumulative effect on WTE has been included, although this has previously been suggested as necessary by SNH.

#### **Black-throated Diver (BTD):**

74. The original survey data shows that the species uses a number of lochs within the area either for breeding and/or feeding. It's clear that in this area commuting flights to larger lochs and nearby sealochs are regular. Historical use of the area is not well known and the current information makes it difficult to be certain how many pairs are present and breeding – the ES estimates 2-3prs with only one confirmed breeding pair in the revised layout. Given the wide use of the area, it is possible that more than 2-3 pairs are present and/or that breeding locations may alternate, therefore whilst there is mitigation in terms of turbine shut-down through identifying a flight corridor for the one regularly used nesting loch during the survey, it may not account for future changes.

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<sup>8</sup> A closed population is one in which there is no immigration and no emigration.

75. The mitigation of shutting down 6 turbines is estimated to take the collision risk down to a total of 3.9 birds from 7 over the lifetime of the windfarm. However we believe that these figures are likely to be underestimated.
76. The problems with using double weighted means, discussed above under Golden eagle, also apply here.
77. It is stated that for red-throated and black-throated diver the 'less-predictable' movement model was used to calculate collision mortality. There are two general methods of calculating collision risk; a predictable movement model and a less-predictable movement model. SNH advises that the 'predictable' movement model is the preferred model for these species. A predictable movement model is based on the number of birds crossing a defined area. This method is preferred for species such as divers, as their movement is more direct than that of foraging raptors or displaying waders.
78. We can't re-calculate the diver models, based on a predictable movement model, as the data required is not available within the ESFI. Table 5.1.6 presents species biometrics and flight speeds. The wing span and lengths given are those at the maximum of the range given in Cramp *et al.* Whilst this in itself is not a problem, it does provide a worst-case in predicting the probability of collision. However, Table 5.1.5 also provides bird biometrics and flight speeds, in which the flight speeds of both diver species differ from that presented in Table 5.1.6
79. Divers are well-known as powerful flyers in sustained flight, and so birds on feeding trips or away from arrival/departure points should fly faster, i.e. such as those shown in Davis (1971). These expectations and observations have implications for the most appropriate flight speed to use in CRMs for both diver species, which should be context-specific. Hence, we would suggest that in the vicinity of a breeding/feeding loch or water body involving departure and/or arrival flights a flight speed of 15 m/s should be used in CRMs because as flying birds approach a loch their speed should decrease to reduce impact with the water and when birds are taking off from a loch their speed will obviously increase with time. For 'transit' flights away from a breeding/feeding water body a flight speed of 20 m/s should be used in CRMs. It also states that turbine shutdown would only be implemented during July and August during dawn and dusk – it would need to start earlier in the breeding season as BTD nest earlier and can have chicks from early June.
80. Additionally the difficulty in assessing the number of pairs present makes any assessment at a population level more difficult. The population viability analysis (PVA) modelling carried out for this species is not realistic by the developer's own admission, and we cannot have confidence in the results. We would agree that the adult mortality figure may not be appropriate as it is derived from ringing returns from the more migratory Swedish population. National census data would argue against the notion that the Western Isles acts as a 'sink' for black-throated divers, and the black-throated divers in the Western Isles have been poorly studied with regard to productivity for any quantitative assessment to be made.
81. Further the NHZ population estimate is too low. The WI population increased from 17 to 25 pairs between the 1985 & 1994 national surveys, whilst provisional unpublished figures from the 2006 survey suggest a further increase, which are similar to those quoted in the Feiriosbhal ES. Much of this is due to a better understanding of black-throated diver breeding behaviour in the WI and increased survey effort. As shown by the ESFI data this species occurs widely in the WI outwith the designated site citation figures which are used to form the basis for the population estimate. A population of 30-40 pairs is more realistic.
82. In summary, the assessment on the breeding distribution of black-throated divers does not cover inter-annual variation in numbers and nesting locations. Whilst the mitigation proposed could lower the collision risk for the most regular nesting pair, its efficacy is compromised by the above weakness in the assessment, and by use of the wrong Collision risk model. Additionally to be successful it should be applied from April to August not July to August.
83. The population estimate and PVA information underestimates the NHZ population, which weakens the NHZ assessment, whilst the PVA is unrealistic. More focussed work to establish the actual number of breeding pairs especially in the northern part of the array would be very helpful in assessing the

impacts on this species. The information submitted does not remove uncertainty on the effects of the NHZ black-throated diver population.

#### **Red-throated Diver:**

84. The ES recorded up to 5 pairs of this species within the windfarm area in 2004 but only 2 in 2003. This suggests changes in numbers and distribution between years. This would fit with observations elsewhere in the WI, where suitable nesting lochans outnumber the number of breeding pairs. Analysis of data for Lewis with regard to the Lewis Windpower proposal showed that these changes may only be picked up over a long period of time.
85. The diver PVA appears incomplete with some text missing. In App 5.3 para b) it seems to switch from black-throated diver productivity data to red-throated, or alternatively it appears to be combining the two which is odd. There is no model produced for red-throated diver. We would also dispute the comment stating that productivity is lower on other Scottish Islands compared to Shetland for red-throated diver – the long term averages in the annual JNCC Seabird Monitoring reports indicate levels are similar across NW Scotland and its islands from the sites sampled.
86. The NHZ population estimate is flawed; the combined figures for Lewis Peatlands and Mointeach Scadabhaigh citations are higher than 1997 estimate given, and the species is widespread outwith these sites. The 2006 national survey paper for red-throated diver (in press.) give a figure of close to 300 pairs for the WI, plus there will be a few on Coll to add to the NHZ figure. NHZ pop minimum is 600 birds
87. Based on this the predicted loss of 28 red-throated divers over the lifetime of the windfarm would equate to the loss of 0.19% of NHZ population/annum, however we believe that additional mortality for RTD has been underestimated by applying the wrong collision risk model – see discussion above under black-throated diver. Evidence from Smola in Norway where the large windfarm is cited in a similar landscape and habitats, suggests that red-throated divers have shown displacement and avoidance activity, however, with small developments in Orkney divers have shown little change in behaviour. The current array in this case may well lead to displacement or avoidance, but it is difficult to quantify.
88. As with black-throated diver the turbine shutdown mitigation suggested does not account for inter-annual change of nest site, and to be effective would need to cover a longer part of the breeding season.
89. In summary, the assessment has similar weaknesses to that for black-throated diver, so again there is uncertainty over effects at NHZ population level, although given the significant underestimation of the NHZ population, the impacts may be low enough to not be a problem. A better assessment is required to address this.

#### **Merlin**

90. The 2008 national survey estimate is likely to be similar to the previous one and be c1200 pairs. NHZ population is probably as quoted, c100 pairs, so the development has the potential to affect up to 3 pairs. Merlins can be affected by displacement, and it would potentially affect more than 1% of the NHZ population. However, given the apparently intermittent breeding attempts on the area and the fact that it is unlikely that all the birds would be lost to the population, it is unlikely to be a major impact on the NHZ population. Merlin does not show up well in VP surveys usually, however, there are periods where they would be at risk – during display flights and if in prolonged chases of prey where they can be at collision risk height. Nevertheless overall the risk is probably limited as the majority of flights are usually lower than collision risk height.

#### **Golden Plover**

91. SNH considers the NHZ figure used in the assessment as being too low. The assessment makes reference to Ovenden Moor and Farr windfarms as evidence that golden plover habituate to windfarms, but the picture is actually more complex. The layout at Ovenden is considered one of the reasons why there has not been a big displacement effect whereas at Farr the emerging pattern from the ongoing work is for fewer pairs to nest in the 'core' of the windfarm site with a move to the north of the turbines evident (no breeding here prior to windfarm construction). Pearce-Higgins *et al* (2008) showed that golden plover can get displaced from turbines at distances from 200m.

92. Overall, however, it is likely that the number of pairs displaced would not be significant at an NHZ level. During construction, suitable mitigation to minimise disturbance i.e. working outwith the breeding season should be employed.

**Dunlin**

93. Like golden plover, they can be subject to displacement but it is unlikely to be significant at an NHZ level.

**Greenshank**

94. Again the NHZ figure presented in the ESFI is too low; however, taking a higher figure of 300 pairs suggests that around 3% of the population (9 pairs) could be affected by the development. It is probably unlikely that all of these would be lost permanently to the NHZ population. As for the other waders suitable mitigation should be employed to minimise disturbance to breeding birds.

95. Some of the basic mitigation suggested includes physical measures to prevent birds nesting within the construction site if work is necessary in the breeding season. Given, the sensitivity and legal status of some of these species this would be inappropriate, and legally questionable should the birds be discouraged from nesting once nest building has started.

## ANNEX 5

### EUROPEAN PROTECTED SPECIES (OTTER)

#### *Legal Position*

1. The Wildlife and Countryside Act 1981 (as amended) provides full protection for certain animal and plant species. Some of these species are further protected as 'European Protected Species' under Regulations 39 and 43 of the Conservation (Natural Habitats &c.) Regulations 1994 (as amended). The species identified above are European Protected Species.
2. This means it is illegal to:
  - Deliberately or recklessly kill, injure, disturb or capture/take European Protected Species of animal,
  - 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.
3. 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, 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/epsg-00.asp> or by writing to the Species Licensing Team, Countryside & Natural Heritage Unit, 1 H South, Victoria Quay, Leith, EDINBURGH, EH6 6QQ or by telephoning 0131 244 7381.
4. 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 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:
5. Test 1 - The licence application must demonstrably relate to one of the purposes specified in Regulation 44(2). For development proposals, the relevant purpose is likely to be Regulation 44(2)(e) for which Scottish Executive is currently the licensing authority. This regulation states that licences may be granted by Scottish Executive 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".
6. Test 2 - Regulation 44(3)(a) states that a licence may not be granted unless Scottish Executive is satisfied "that there is no satisfactory alternative".
7. Test 3 - Regulation 44(3)(b) states that a licence cannot be issued unless Scottish Executive 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 Executive will, however, seek the expert advice of Scottish Natural Heritage on this matter).
8. 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.

## **ANNEX 6**

### **ADVICE ON THE EFFECTS OF THE PAIRC WINDFARM PROPOSAL ON LANDSCAPE AND VISUAL AMENITY**

#### **Background**

1. SNH provided a response to the Scottish Executive on the original Pairc windfarm proposal for 57 turbines in our letter of 27 August 2007. SNH recognised that this proposal would have significant adverse landscape and visual impacts but made no objection on these grounds. We did however recommend that 14 turbines should be removed from the proposal to lessen its impact.

#### **The revised proposal**

2. The revised proposal comprises 26 turbines, with turbines removed from the sensitive 'Rocky Moorland' landscape character type, from the area close to and east of the B8060. SNH considers that the revised proposal is a significant improvement on the original 57 turbine proposal. The revised proposal reduces direct impacts on highly sensitive landscapes and the turbines appear as a tighter, more cohesive grouping than the fragmented and cluttered layout of the original scheme in key views.

#### **The 'Further Information Report' January 2009**

3. The landscape and visual assessment set out in the Further Information Report submitted by the applicant in January 2009 rightly focuses on a 10km study area where significant impacts were shown to arise in the ES for the original proposal.
4. It would have been useful to have had a clearer and larger scale Zone of Theoretical Visibility map reproduced in the Further Information Report.
5. In our original response we commented on the inappropriateness of the methodology adopted for landscape and visual assessment in the Environmental Statement. We still have reservations about the methodology adopted for the assessment of the revised proposal. Our main concern is the confusion that is apparent within the assessment of visual impact where the appraisal of receptor sensitivity and the magnitude of change does not accord with good practice as set out in the Guidelines for Landscape and Visual Impact Assessment (second edition). We believe that this confusion has resulted in an under-estimation of the visual impacts of the proposal.

#### **Landscape and visual effects**

6. Despite the obvious improvements that have been made to the revised proposal, it is SNH's view that this windfarm would still result in some significant adverse landscape and visual impacts.
7. We are in general agreement with the assessment of impacts on landscape character that there would be substantial impacts on the 'Rocky Moorland' character type and moderate adverse impacts on the 'Knock and Lochan' and 'Boggy Moorland' character types.
8. In terms of the effects on views and visibility, we believe that the assessment under-estimates the sensitivity of receptors and the likely magnitude of change. At 145m high, these turbines would form very dominant features seen from properties and roads. However, we consider that the revised layout has brought about notable improvements to views from Leumrabhagh, Gearraidh Bhaird, the B8060, Crosbost and Acha Mor in reducing the spread and visually dislocated array of turbines in the original scheme. We believe that impacts on views from Lacasaidh, the B8060, Crosbost, Grabhair and Acha Mor would be significant and adverse due to the high sensitivity of receptors and the magnitude of change associated with very large turbines seen in relative proximity to the viewpoint and also considering the particular visual context of these views.
9. We assume that the summary table 13.3 is incorrectly shaded in relation to highlighting of significant impacts.

### **Cumulative landscape and visual impacts**

10. There would be cumulative landscape and visual impacts associated with the consented Feirosbhal windfarm and this proposal. Both developments would lie in close proximity to each other and in views from settlements to the north such as Tabost and from Baillie Ailen and Acha Mor, they are likely to appear as a single development.
11. While SNH considered potential cumulative effects between the original Pairc proposal with the proposed Lewis and Muaitheabhal windfarms, the Feirosbhal windfarm was not in the public domain at this time. The Feirosbhal windfarm comprises 13 turbines which form a 'sub-set' of the Muaitheabhal windfarm proposal.
12. The applicant has not undertaken a cumulative landscape and visual assessment which specifically considers the consented Feirosbhal windfarm. This is a significant omission.

### **Conclusion**

13. SNH considers that this revised 26 turbine proposal is an improvement to the original scheme but some significant and adverse landscape and visual impacts would still remain.

## ANNEX 7

### ADVICE ON THE EFFECTS OF THE PAIRC WINDFARM PROPOSAL ON PEATLAND HABITATS

1. In August 2007 SNH objected to the proposed Pairc development “*on account of the impacts upon blanket bog, a priority habitat listed on Annex 1 of the Habitats Directive, until such time as it can be demonstrated that:*
  - *all possible alternatives to the crossing of valley mires have been explored;*
  - *where crossing such mires is genuinely unavoidable, the engineering solution proposed is one that has been proven to be successful in similar circumstances elsewhere.*”
2. SNH reserved its position regarding a number of potentially adverse impacts from the development upon peatland habitats pending further information.
3. SNH considers that the first bullet has been addressed on the revised layout through rerouting of a number of sections of track.
4. In relation to the second bullet, the general approaches described can work, although the detailed design and construction methods have not been described.
5. Most of the issues over which we reserved our position have not been addressed, although the reduction in the scale of the proposal is also clearly significant in terms of reducing its potential impact.
6. All other issues can be addressed through:
  - Agreed Construction Methods Statements
  - The development of an agreed Habitat Management Plan
  - The development of an agreed Peat Management Plan
  - Employment of a Geo-technical Engineer
  - Employment of an Ecological Clerk of Works
7. SNH therefore **recommends** that these points are addressed through conditions attached to any consent.

#### Detailed comments

##### Chapter 4 Ecology

8. One page of this chapter is devoted to habitats, specifically Valley Mires. This describes the reduction in the number of turbines and the consequent reduction in track length. Some realignment of the track across the Abhainn Ghleann Ouirn to reduce impacts on valley mire is described and welcomed.
9. It is, however, disappointing that:
  - no attempt has been made to quantify habitat losses;
  - there has been no clarification regarding which parts of the site were surveyed by remote means only, nor of the nature of the remote survey;
  - still no information has been provided regarding the species and habitats associated with Borrow Pit A;
  - no rationale has been provided for the assessment of dry and wet heath and calcareous grassland as of only Regional and Local importance respectively.

##### Chapter 8 Soils and Water

10. Page 8-11, Section 8.4.4. “Because of the size of the site it was not possible to traverse the whole site”. Compared with many developments and surveys this site is not unusually big or remote. There is no excuse for anything other than a comprehensive survey.
11. Page 8-15, Section 8.5.5, 3<sup>rd</sup> paragraph. The catotelm is not “generally impermeable”. It is permeable but with a low hydraulic conductivity. Also, where peat pipes occur there can be considerable water flow within the catotelm.

12. Page 8-25, Section 8.6.2, 2<sup>nd</sup> full paragraph. "Within the vicinity of the wind farm development 15 areas were identified as having a potential peatslide risk prior to mitigation". According to the Peat Stability Assessment only 12 areas had a significant Hazard Ranking. The other three areas were control points.
13. Page 8-27, Section 8.6.2, 1<sup>st</sup> paragraph. "To maintain the surface flow the base layers of the floating track will be made as permeable as possible, using large size aggregate which will allow surface water to percolate through the base of the track". However, large size aggregate is unlikely to interlock with the geogrid thus weakening the track structure and risking track failure. SNH suggest alternative options are considered to ensure hydrological connectivity across the track line.
14. Page 8-39, Section 8.6.5. "Bog and peatland habitats are highly susceptible to damage because of changes in water levels and water chemistry..." Considerable care will therefore have to be taken when discharging drains etc into these habitats.

### **Peat Stability Assessment July 2008**

15. Page 11, Section 3, 6<sup>th</sup> Paragraph. It is not clear how the 'deep peat' areas in Drawing 9 were determined, nor what constitutes "peat of significant depth". Likewise at the 8<sup>th</sup> Paragraph it is not clear how Areas A – K were determined. This significance of this is that that information and these areas were used in determining mitigation measures through rerouting of tracks. It would therefore be helpful to understand the rationale for selecting some areas as opposed to others for this closer scrutiny.
16. Page 13, Section 3.3 Area C. The proximity of a quaking bog to a proposed track makes this area particularly sensitive. This is acknowledged and it is proposed that "floating road construction will be used to cross this area with minimal disruption to the peat body". While a floating road is likely to be less disruptive than a cut road, this will only be the case if great care is taken regarding design and construction. If the floating road was to sink, then there is a higher risk that the down-slope quaking mire would be compromised.
17. Page 17, Sections 3.8 Area H and 3.9 Area I. The proposed track realignments are welcomed.
18. Page 27, Section 6, Hazard Ranking. While the use of expert judgement to determine the ratings for Hazard and Exposure is accepted it would be help if the process was more transparent, for example by identifying which peat landslide indicators were used and how they contributed to the overall Hazard score, and what features and thresholds were used in determining Exposure.
19. SNH notes that the risks to wind farm personnel and infrastructure do not appear to have been taken into account in determining Hazard and Exposure.

Page 28, Table 10, Hazard Ranking and Appropriate Mitigations.

20. Given the lack of transparency in determining Hazard and Exposure, there is no way for anyone other than the authors to determine the accuracy of the Hazard Ranking. Also, the Hazard Ranking appears to relate to background hazard only and does not appear to take in to account the implications of wind farm construction. This seems inappropriate.

Page 34, Detailed Assessment, Location 2 (as an example).

21. Following ground investigation the Hazard Rating has been reduced from 3 (likely) to 1 (negligible) with a consequent reduction in the Hazard Ranking from 9 (significant ) to 3 (insignificant). As mentioned above, without knowing the criteria and thresholds for determination of the Hazard Rating it is not possible to conclude whether this re-evaluation is appropriate. This is not satisfactory.

## Environmental Health Comments 2007

### SCOTTISH & SOUTHERN APPLICATION FOR PAIRC WINDFARM, PLANNING CONSIDERATIONS 29.08.07

#### SUMMARY

This response from the Health and Consumer Services Section of Sustainable Communities gives an introductory explanation of noise and the terms and concepts used. It then goes on to consider the following, specifically in relation to this application.

- Noise
- Air quality
- Private Water Supplies
- Contaminated Land
- Shadow Flicker

Some of these matters have been considered by the applicant, however;

- in respect of noise, background readings have not been carried out, so it is not possible to fully consider the issues;
- in respect of air quality, specifically dust, the applicant does not consider there to be any receptors in the area. However, some of the access tracks are close enough to houses for dust to potentially be a problem;
- the potential presence of contaminated land has not been considered;
- the statement says in Chapter 7 (Planning Context) that shadow flicker is considered, but there is no reference to it in the rest of the document.

#### CONCLUSIONS

It has not been possible to fully consider the application due to lack of information on several topics. However, when the additional information is provided, it should be possible to ensure suitable conditions can be attached to any consent to deal with most of the issues.

The exception to this may be noise. As some of the turbines are less than 1km from houses it may not be possible to achieve suitable noise levels. If this is the case then it may be necessary to remove or relocate a small number of specific turbines to achieve the noise standards given in appropriate guidance.

#### INTRODUCTION

- 1.1 The comments on the application from the Health and Consumer Services Section of Sustainable Communities consider the potential effects from the construction and operational phases on people around the application site and routes to the site. The aspects covered are noise, air quality, private water supplies, contaminated land and shadow flicker.
- 1.2 The noise aspects of windfarms are complex and continually changing with new technology. Most work in the past has been done on developments of a much smaller scale than this proposal and consequently, in relation to this, it is recommended that specialist advice should be sought by the Scottish Executive on certain matters. These are discussed below.
- 1.3 It should also be noted that in addition to planning controls, if the development proceeds, and if complaints are received about noise or dust, the Comhairle has a Statutory Duty to investigate complaints and serve Notices if Statutory Nuisance is established. This can be time consuming and will have a significant resource implication for the Comhairle.
- 1.4 Consequently, the aim of this report is to bring to the Comhairle's attention matters which are considered important for it to be raised with the Scottish Executive, so as to ensure: -
  - a) Protection of the public.
  - b) Protection of the future interests of the Comhairle.

#### NOISE

- 2.1 Noise is a complex subject. An explanation of some of the terms and concepts are given below.

- 2.2 One definition of noise is “sound which is unwanted by the recipient”.<sup>(1)</sup> Most people have experienced the effects of noise when staying near busy roads, airports or building sites. Excessive noise can interfere with speech, quiet pursuits, studies, sleep and the enjoyment of television and radio. Sudden noises can wake and disturb children and frighten animals.
- 2.3 Sound causes pressure changes in air, which are detected by the human ear, but the measurement of sound in pascals (which is the unit of pressure) would produce unmanageable numbers and therefore the simpler decibel (dB) scale has been devised. Because the scale is logarithmic, a **doubling** of the pressure results in an increase of **6dB**. The following short table shows the subjective effect of changes in noise levels.

Change in Level (dB)	Subjective Effect
3	Just perceptible
5	Clearly perceptible
10	Twice as loud

- 2.4 There is, however, another feature of noise measurement to be considered. This is the way that the human ear perceives sound. As an example, a meter showing sound pressure levels in dB might register the same value for both the noise of a circular saw and for the noise level inside a bus. A circular saw would be more annoying, however, due to the high proportion of high frequencies in the most sensitive ranges of the ear. The A weighted decibel (dB(A)) is therefore used which takes account of the way the human ear reacts.

The following list gives typical noise levels in terms of dB for common situations<sup>(1)</sup>:

Sound Level in dB	Environmental Noise	Average subjective description
140	Military aircraft 30m from take off	Intolerable
130	Pneumatic chipping & riveting (operator position)	
120	Ships engine room (full speed)	
110	Sheet metal shop – hand grinding	Very noisy
100	Underground station platform	
90	Construction site, pneumatic drill	
80	Kerbside of busy street	Noisy
70	Loud radio in average domestic room	
60	Busy office	
50	Conversational speech at 1m	Quiet
40	Average suburban area	
30	Library	
20	Background in broadcasting studio	Very quiet
10	Threshold of hearing	
0		

## EXISTING NOISE

- 3.1 Another important concept, in terms of the way noise is perceived, is the difference between the existing background level of noise and the introduced source. The main method of assessing this, BS4142<sup>(2)</sup>, compares the existing background noise level to the predicted noise level of the introduced source and indicates if complaints are likely to occur. Generally an increase of greater than 10dB(A) is considered as likely to give rise to complaints. This information is given as a guide, as the method is intended for use in mixed residential and industrial areas and is generally not applicable to areas such as rural Western Isles, which have very low background noise levels, mostly attributable to natural sources.
- 3.2 Another consideration is Circular 10/1999<sup>(3)</sup>, Planning and Noise, which states *‘the planning system has a role to play in preventing and minimising the impact of noise through its influence over the location and design of new developments. It should do this without placing unreasonable restrictions on development or adding unduly to the costs of and administrative burdens of business.* However, the Circular also refers to the environmental quality of many of Scotland’s rural areas and states *‘The effect of noise on the enjoyment and conservation of areas designated for their landscape and wildlife value’ should therefore be taken into account’.*

## INDIVIDUAL SENSITIVITY

Sensitivity to a particular source of noise seems also to depend upon the interpretation put on it, including;

- (a) concerns about the effect on health;
- (b) fear of the source (e.g. fear that sonic booms may cause structural damage or fears aroused by a barking dog or a wailing child);
- (c) the duration of the noisy activity;
- (d) whether the noise is considered to be important for the recipient’s social or economic well-being (e.g. employment or the need for transport);
- (e) whether it is believed that those responsible for the noise producing activity are concerned with the recipient’s welfare.

## NOISE

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Scope	The applicant states that the development will introduce additional noise sources to the area, which may be audible at locations around the site. The construction phase will introduce temporary noise from construction plant, and the operational phase will introduce both aerodynamic noise from the turbines and to a lesser extent mechanical noise from the gearboxes and generators. Vibration effects, noise from blasting and decommissioning effects have been scoped out of the environmental statement.	<ul style="list-style-type: none"> <li>• Blasting can cause noise and vibration effects to structures and people.</li> </ul>	<ul style="list-style-type: none"> <li>• The safety aspects of blasting are strictly controlled and planning conditions can be imposed to control blasting activities.</li> <li>• <i>If consent is granted it is recommended that suitable conditions are imposed to control blasting operations.</i></li> </ul>

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Policy	<p>The applicant refers to a variety of relevant planning policy guidance, including ETSU-R-97,<sup>(4)</sup> <i>The Assessment and Rating of Noise from Windfarms</i>. (This document presents the recommendations of the Working Group on Noise from Windfarms, set up in 1993 by the Department of Trade and Industry).</p> <p>Reference is also made to BS5228<sup>(5)</sup>, the relevant document for dealing with and predicting construction noise and Department of the Environment Advisory leaflet (AL) 72, <i>Noise Control on Building Sites</i>.<sup>(6)</sup></p>	<ul style="list-style-type: none"> <li>The applicant's noise consultant contacted the Environmental Health Section in January 2006 and indicated they would be using ETSU methodology. It was agreed that this was suitable. They also indicated that they would contact us again to discuss suitable background noise monitoring locations. No further contact has been received from them. However, they do indicate in the submission that they intend to carry out background noise readings and submit these to the Comhairle, and in a recent email to the Planning Section, they indicate they will have this information by mid September, subject to a range of wind speeds having been encountered.</li> </ul> <p><b>NB.</b> The applicant has not agreed the suitability of the background monitoring locations with the Comhairle, contrary to the ETSU advice.</p>	<ul style="list-style-type: none"> <li>Full consideration of the application in terms of noise cannot be carried out until the background noise information is obtained.</li> </ul>

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Construction Phase	<p>The applicant states that 'construction noise predictions have not been carried out as part of this assessment because of the large separation distances between construction areas and residential properties and because construction programmes are prone to change. Indicative calculations show that noise levels from construction activities will be well below the 67dB L<sub>Aeq</sub> adopted criterion'. (The 67dB L<sub>Aeq</sub> adopted criterion referred to is the level given in the Department of the Environment Advisory leaflet (AL) 72, <i>Noise Control on Building Sites</i>.)<sup>(6)</sup>.</p> <p>In the section on Significance Criteria the applicant states that 'construction activities are relatively short term and therefore it seems reasonable to adopt the criterion specified in the leaflet.'</p>	<ul style="list-style-type: none"> <li>• Construction noise, at levels of 67dB L<sub>Aeq</sub> is likely to be significantly above the background noise levels in the area.</li> <li>• The construction phase is predicted to be for two years, which cannot be considered to be short term. However the construction in each location may well be of shorter duration.</li> </ul>	<ul style="list-style-type: none"> <li>• Construction site noise predictions and control measures should be in place before any construction work is carried out.</li> <li>• <i>If consent is granted there should be a condition requiring full assessment of construction noise, in each area, in terms of BS 5228<sup>(5)</sup>, prior to work commencing.</i></li> </ul>

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Operational Phase	Turbine noise predictions were carried out using ISO 9613 and a table is presented showing the predicted noise levels at a variety of wind speeds closest to residential property and community locations around the site, together with the minimum background noise level which would be required to ensure compliance with the relevant noise limits.	<ul style="list-style-type: none"> <li>• The document refers to Table 12.10, however there is no such Table in the document, so it has been assumed that table 12.9 is the appropriate one.</li> <li>• It is considered that the background noise levels, when available, will be significantly lower than some of those indicated in the table as giving compliance with noise limits.</li> <li>• No further comments can be made until the background noise readings are available.</li> </ul>	<ul style="list-style-type: none"> <li>• No further comments can be made until the background noise readings are available.</li> </ul>
Infrasound and Low Frequency	<p>The applicant refers to DTI report W/45/00656/00/00<sup>(7)</sup>, The Measurement of Low Frequency Noise at Three UK Windfarms. This report suggests that 'it may be appropriate to revisit the issue of aerodynamic noise, especially at night'.</p> <p>The applicant continues that in the cases where aerodynamic noise has been identified as an issue, turbine orientation and/or site topography are likely to be a major contributory factor.</p> <p>The Department for Communities and Local Government has recently written to all English Local Planning authorities to confirm that the existing guidance is followed and that more work is required on the problem. The applicant concludes that this advice should also be followed in Scotland.</p>	<ul style="list-style-type: none"> <li>• Until further work is carried out and guidance is issued it is not possible to make any comments on this issue. However if information comes to light during the rest of this application process and prior to any construction work it should be taken in to account.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>If consent is granted it is recommended that the applicant be required to take in to account any new information that becomes available on the issue of aerodynamic modulation in the design and layout of the site.</i></li> </ul>

## AIR QUALITY (DUST)

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Construction phase	<p>The applicant states that 'During the construction phase materials will be disturbed by various activities that have the potential to generate fine particles capable of being airborne' they go on to indicate that the operation of borrow pits, crushing &amp; screening of aggregate, passage of vehicles and discharge from vehicles may generate dust. The potential impacts are then described. They then state 'significant effects due to dust particulate are unlikely since no dust sensitive receptors have been identified and best practice dust control measures will be implemented'.</p>	<ul style="list-style-type: none"> <li>• Some of the access tracks to the site are less than 500m from houses, consequently windborne particulates could be an issue.</li> </ul>	<ul style="list-style-type: none"> <li>• <i>If consent is granted it is recommended that a condition be applied requiring the applicant to take measures to control dust from construction areas, borrow pits and access tracks.</i></li> </ul>

## PRIVATE WATER SUPPLIES

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Private Water Supplies	The applicant contacted the Health & Consumer Services Section with regard to private water supplies.	<ul style="list-style-type: none"> <li>There are no private water supplies, in the application site, on the Public register held by the Department.</li> </ul>	<ul style="list-style-type: none"> <li>It is possible that some unknown private water supplies exist and may be found during the work.</li> <li><i>If consent is granted it is recommended that a condition be applied requiring the applicant to inform the Comhairle and take appropriate steps to protect any such supplies.</i></li> </ul>

## CONTAMINATED LAND

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Contaminated Land	The applicant refers to actions to be taken and mitigation measures to prevent land contamination from the construction phase of the works. However no information is provided on any investigation to identify any existing contaminated land.	<ul style="list-style-type: none"> <li>It is possible that there are old community tips and other sources of land contamination in the application area.</li> </ul>	<ul style="list-style-type: none"> <li><i>If consent is granted it is recommended that a condition be applied covering the mitigation measures proposed by the applicant to prevent land contamination.</i></li> <li><i>If consent is granted it is recommended that a condition be applied requiring a desktop study to locate any contaminated land within the site and actions to be taken if any is discovered.</i></li> </ul>

## SHADOW FLICKER

TOPIC	APPLICANTS VIEW	COMMENTS	POSSIBLE MITIGATION/CONTROLS
Shadow Flicker	In Chapter 7, 'Planning Context', the applicant refers to Planning Advice Note (PAN) 45, and the list of matters, which should be addressed. This includes shadow flicker. The applicant then states that 'An assessment of the effects of the proposed development in relation to the above issues is provided in the relevant sections of this ES'.	<ul style="list-style-type: none"> <li>Shadow flicker happens when the sun is low in the sky and shines on a building from behind a turbine rotor. This can cause the shadow of the turbine blades to be cast onto the building, which appears to flick on and off as the turbine rotates. When this flicking shadow is viewed through a narrow opening it is known as shadow flicker.</li> <li>There is no consideration of shadow flicker in the ES.</li> </ul>	<ul style="list-style-type: none"> <li>It is recommended that the applicant is required to submit an assessment of the potential for shadow flicker, including driver distraction from the proposed site.</li> </ul>

## REFERENCES

1. B McKell, Institute of Acoustics Certificate of Competence handout, University of Strathclyde, September 1999
2. British Standard BS4142 Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas 1997.
3. Scottish Executive (1999) Circular 10/1999, Planning and Noise.
4. Department of Trade and Industry ETSU-R-97, The Assessment and Rating of Noise from Windfarms, 1996.
5. British Standard BS5228, Noise and Vibration Control on Construction and Open Sites. British Standards Institute 1997.
6. Department of the Environment Advisory Leaflet (AL) 72, Noise Control on Building sites. DoE1976.
7. Dti Report W/45/00656/00/00, The Measurement of Low Frequency Noise at Three UK Windfarms. Department of Trade and Industry 2006.
8. Scottish Office PAN 45, Planning Advice Note, Renewable Energy Technologies 1994.

**COMHAIRLE NAN EILEAN SIAR – Technical Services 2007****PAIRC WINDFARM DEVELOPMENT****1 INTRODUCTION**

- 1.1 This paper is the result of an initial consideration by Technical Services of the planning application for a windfarm in the Pairc area and how it is envisaged that the developments will impact on existing transport infrastructure:
- 1.2 Technical Services has concentrated on the impacts as a result of the significant increase in traffic arising from:
- |                      |  |
|----------------------|--|
| Construction traffic | Traffic associated with the mass movement of construction materials, eg roadstone and concrete aggregates, removal of excavated material, cement, reinforcing, shuttering, etc |
| Component traffic    | Traffic associated with transportation of tower sections, nacelles, turbine blades and other turbine components  |
- 1.3 Comments made in this paper are based on an initial assessment of the application. Further and more detailed consideration of the issues will have to be carried out and further negotiations with the developers will have to take place as part of the planning process over the next few months.
- 1.4 It is considered that, with the agreement and implementation of appropriate traffic management plan covering both total additional traffic volumes and extraordinary loads, the capacity of the existing road network is sufficient to accommodate the anticipated traffic flows. However there could be significant issues associated with the movements of very heavy and abnormal sized loads on our existing roads infrastructure.
- 1.5 Any increases in traffic during the operational phases of the developments are not considered significant and have therefore not been considered as part of this exercise.

**2 CONSTRUCTION TRAFFIC**

- 2.1 It is apparent from the application that the construction of this development will involve a significant increase in traffic on the surrounding roads and the main routes across the isle of Lewis.
- 2.3 The applicant indicates that the majority of construction materials for the internal roads will be, where possible, sourced from within the site through the establishment of rock sources. However, there will be a requirement to import some stone to construct initial access roads to each of the internal quarries as well as significant quantities of construction materials such as cement, fine aggregate, reinforcing steel, shuttering systems and electrical cables to each of the turbine locations. Despite assertions to the contrary within the submitted documents, this element of the development will result in significant increases in the volume of traffic using existing roads and there will be the potential for damage to the integrity of the existing public roads and structures.

### **3 COMPONENT TRAFFIC**

- 3.1 It is likely that the turbines to be erected, as part of the development will be amongst the largest to be erected in Europe and salient dimensions of the current size of turbines are shown by the applicant in their submission. Given the likely lengthy lead in time for this development it is probable that turbine size and weight will increase as has been the case over the recent past. It is almost certain therefore that the potential for damage to the existing roads has been underestimated within the application details.
- 3.2 In the consideration of the impact of component traffic, we are advised that the components are to be transported from either Stornoway harbour or the Arnish Point Fabrication Yard. The existing access road to Arnish is in private ownership and any required upgrading or subsequent damage would be any issue for the road owners, hence the Comhairle as roads authority has no interest in this section of the access route. The routing of any oversize/weight vehicle through the centre of Stornoway will present significant problems and the applicant should be required to, wherever possible, route deliveries through the Arnish site.
- 3.3 Discussions have taken place with Northern Constabulary and it is apparent that a distinction must be drawn between general construction traffic, which constitute normal sized vehicles, and the component vehicles, which will be heavy, wide and/or long and so are required to be notified to the Comhairle prior to any such movement on the public road.
- 3.4 The loads associated with the tower sections and the nacelles are extremely heavy and wide and of such a dimension that special escorts will be required. Similarly, although not regarded as a wide or heavy load, the blade loads are extremely long. The application highlight the need for the effective management of traffic and Traffic Management Plans will have to be developed and implemented by the developers to the satisfaction of Northern Constabulary and the Comhairle. The implementation of these Plans will be extremely onerous in terms of resources and all associated costs shall have to be met by the developers.
- 3.5 As part of this, additional infrastructure and traffic control measures will require to be provided by the developer to enable these Management Plans to be implemented safely and in such a way as to minimise disruption to normal traffic. Examples of this are the provision of appropriately sized lay-bys at two mile intervals along the access route to enable the extraordinary loads to pull over to allow traffic to pass.
- 3.6 The management of these loads will be relatively easy on open moorland sections of the A859 Stornoway to Tarbert from Arnish road through to the South Lochs road junction, but will be more problematic when moving along the narrower and the single track sections of the B8060 into the site. There will also be some complicated issues to manage when these heavy and wide loads are being manoeuvred through townships.

### **4 IMPLICATIONS ON EXISTING INFRASTRUCTURE**

- 4.1 Although the majority of roads in the Western Isles are founded on peat, the roads are generally "fit for purpose" and are generally able to withstand the current volumes and weights of traffic. With regard to 'extraordinary' levels of traffic, section 96 of the Roads (Scotland) Act 1984 provides the Comhairle, as the relevant roads authority, with the powers to:

*"... that having regard to the average expense of maintaining the road, or similar roads in their area, extraordinary expenses have been, or will be, incurred by them in maintaining the road by reason of damage caused to it by excessively heavy, or other extraordinary, vehicles or traffic, they may recover from any person ... by or in consequence of whose orders the vehicles have, or traffic has, been on the road, so much of the expenses of maintenance as is, or is likely to be, attributable to that damage"*

- 4.2 The additional traffic arising from the construction of these developments can easily be classified as "extraordinary" and it is therefore proposed that an agreement be reached with the respective developers that:

- (i) Pre-start condition surveys be carried out by an independent specialist organisation on all those roads likely to be affected by the developments at the expense of the developers;
- (ii) Similar condition surveys be carried out by the same independent specialist on a regular basis, at least six monthly intervals, at the developers' expense for the duration of the development construction;
- (iii) Strengthening, re-alignment and road-widening works be carried out at agreed 'pinch-point' and 'at-risk' locations, including structures, to a specification agreed with the Comhairle to safeguard the integrity of the existing infrastructure for existing traffic as well as enabling the safe passage of construction and component traffic;
- (iv) The surface and general integrity of all roads used by the respective developers be maintained at their expense during all construction works;
- (v) The roads affected are resurfaced to an agreed specification along the lengths affected by construction and component traffic;
- (vi) The delivery of all materials and components for this development should wherever possible be routed through the Arnish site and not through Stornoway town centre.
- (vii) Any and all other works required by the Comhairle as roads authority to ensure compliance with all relevant statutory and legislative requirements.

Technical Services  
Comhairle nan Eilean Siar  
19 September 2007

## SCOTTISH AND SOUTHERN ENERGY

## PAIRC WINDFARM

## COMMENTS FROM COMHAIRLE NAN EILEAN SIAR ECONOMIC DEVELOPMENT

## INTRODUCTION

- 1.1 Scottish and Southern Energy submitted an application for consent under s36 of the Electricity Act 1989 for a 57 turbine, 205MW windfarm at Pairc, Isle of Lewis in May 2007.
- 1.2 Comhairle nan Eilean Siar considered the application and determined to support a revised scheme of 26 turbines, seeking a 'revised application' to reflect the reduced number of turbines.
- 1.3 This Addendum seeks to address concerns raised by the Comhairle and others and proposes a reduced scheme of 26 turbines with the generating capacity of individual turbines unchanged, giving a total windfarm capacity of 94MW.
- 1.4 The reduced scheme, proposed in this Addendum, involves the removal of 31 turbines from the East and South of the site area. All of the 26 retained turbines are in locations proposed in the original scheme. A single site access will be taken from the B8060 West of Habost.
- 1.5 In general terms, the key features of the revised windfarm can be summarised as follows:
- twenty six 3MW turbines with a tip height of 145 metres;
  - installed capacity of 94MW (reduced from 205MW);
  - 16km of cut track (reduced from 36km) and 4km of floating track (reduced from 9km);
  - single access from the B8060 West of Habost;
  - location of Control Building and Substation housing two transformers unchanged;
  - cable run length reduced from 40km to 8km;
  - three permanent anemometers to control turbine operation;
  - aggregate requirement reduced from 350,000 m<sup>3</sup> to 160,000m<sup>3</sup>, leading to a reduction in the number of Borrow Pits from 11 to 6;
  - construction programme of 18 months, commencing in 2011; and
  - interconnector connection scheduled for October 2013.

## DEVELOPMENT IMPACTS

## Construction Impact

- 2.1 The capital cost of the revised scheme is estimated at £107.6m or £4.1m per turbine or £1.14m per MW installed. This compares to £200m for the original scheme.

2.2 This capital cost of £107.6m is broken down as follows:

Project / site management and fees	6%	£6.8m
Cost of turbines (incl. Installation)	73%	£78.6m
Civil engineering work	10%	£10.4m
On-site electrical work and installation	11%	£11.8m
<b>TOTALS</b>	<b>100%</b>	<b>£107.6m</b>

2.3 There is a clear indication that the construction of turbines, the largest component of total capital costs, will take place outside the UK. The Economic Impact Statement submitted by the developer states, *“at present, there is no manufacturing base in the Outer Hebrides and it is assumed that only a small percentage (5%) of expenditure on turbine manufacture is likely to be placed in the Outer Hebrides. It is not known where the main construction of the turbines will take place but it has been assumed in this report that the major work will be undertaken outside the UK, with some additional work undertaken in the UK (20%). This is subject to change dependent on the manufacturing facilities available at the time, possibly at Arnish in the Outer Hebrides and also mainland Scotland”*.

2.4 Construction material will be sourced locally and local transport and hire companies will be used. Even if off-island contractors win the larger contracts, it is envisaged that they will recruit locally whether employed directly, or through locally based sub-contracting firms. A significant proportion of the electrical works will be available to local contractors.

2.5 The following geographic sourcing of inputs is proposed by the developer:

	Outer Hebrides		Rest of Scotland		Rest of UK		Rest of World		TOTAL	
	%	£m	%	£m	%	£m	%	£m	%	£m
Design	5	0.34	90	6.12	5	0.34	0	0	100	6.8
Turbine	5	3.93	0	0	20	15.72	75	58.95	100	78.6
Civils	30	3.12	60	6.24	10	1.04	0	0	100	10.4
Electrical	30	3.54	60	7.08	10	1.18	0	0	100	11.8
<b>Totals</b>	<b>10</b>	<b>10.93</b>	<b>18</b>	<b>19.44</b>	<b>17</b>	<b>18.28</b>	<b>55</b>	<b>58.95</b>	<b>100</b>	<b>107.6</b>

2.6 The above table confirms that, although the direct output in terms of construction cost arises in the Outer Hebrides, the main impact of the scheme is outside the UK and only a very small percentage has a direct local impact.

#### Direct Employment

2.7 To estimate **direct** employment arising from the off-site manufacturing and on-site civils and electrical contracts, the developer has used ‘turnover per employee’ ratios (by sector) from the Annual Business Statistics 2006 and Annual Business Enquiry (Office of National Statistics). These data sources are in line with Scottish Census of Production data and place ‘Turnover per Employee’ in the Scottish Construction Industry at £103,077 (£94,333 in the Outer Hebrides). The same data sources place ‘Turnover per Employee’ in the rest of UK manufacturing industry at £151,688 and, in the absence of a rest of World ratio, this UK figure has been applied to turbine manufacture outside the UK for the purposes of this study.

2.8 Using these ratios, employment over the two year development and construction phase is estimated at 844 person years, or 422 per annum. Standard HM Treasury Guidance states that 10 person years of employment equates to 1 Full Time Equivalent (FTE) job. The development and construction phase of Pairc Windfarm will therefore give rise to 85 FTE jobs. Of this total of 85 FTE’s, 13 FTE’s will be created within local contractors, 20 within the rest of Scotland, 13 in the rest of the UK and 39 in the rest of the World.

2.9 The following table illustrates the estimated **direct** construction related employment generated by the scheme in person years (10 person years = 1 FTE):

	Outer Hebrides	Rest of Scotland	Rest of UK	Rest of World	TOTALS
Design	6	75	5	0	86
Turbine	48	0	104	389	541
Civils	33	61	8	0	102
Electrical	38	69	9	0	116
<b>TOTALS</b>	<b>125</b>	<b>204</b>	<b>127</b>	<b>389</b>	<b>844</b>

#### On-site (Hebridean) Employment

- 2.10 All work undertaken by Hebridean contractors will be on-site. In addition, it is estimated that 80% of the civils and electrical work carried out by 'Rest of Scotland' contractors will be based in the Outer Hebrides and this equates to 104 person years (80% of 130 [civils and electricals]).
- 2.11 Of the Design work procured in Rest of Scotland and Rest of UK, it is assumed that 50% of this work will be based locally, equating to 40 person years (50% of 80).
- 2.12 Total **direct** on-site employment in the Outer Hebrides is therefore estimated to be 269 person years (125 for Outer Hebrides + 104 share of Rest of Scotland + 40 share of Rest of UK). These 269 person years equate to 27 FTE's with an average of 135 people working on site each year.
- 2.13 The 269 person years based locally will release total gross salaries of £7,014,080 over two years. This figure has been derived from the ONS Annual Survey of Hours and Earnings (ASHE) 2007. Specific Outer Hebrides data is not available but Scottish figures have been used with the difference between Outer Hebrides and Scottish salaries across all jobs factored in.
- 2.14 It has been estimated that £2.2m of this £7,014,080 will accrue to mainland contractors whose workers are based in the Outer Hebrides for the duration of the project. That leaves £4.8m accruing to Outer Hebrides resident employees over two years. Income Tax and National Insurance deductions will account for 24% of this £4.8m, leaving net 'take home' pay for Outer Hebrides resident employees in the region of £3.6m over two years.

#### Off-site employment

- 2.15 When the Outer Hebrides on-site component is subtracted from total project person hours (844 – 104 – 40), the remaining 575 person hours or 57 FTE's represent off-site employment. This equates to 288 people per year working off-site on the project. These jobs will predominantly be in turbine manufacture, 75% of which is currently projected to take place outside the UK. If Arnish becomes available for a significant element of turbine manufacture, the local impact of the scheme will accelerate significantly.

#### **Indirect and Induced Employment**

- 2.16 As stated in the table at paragraph 2.5 above, the **direct** impact of the proposed scheme is £10.93m. **Direct** impacts are effects on income, employment and output arising directly from the project, for example jobs created in the construction and operational phases.
- 2.17 In addition to this, there is **indirect** impact – the effects arising from the purchase of goods and services either by the project or for the running of the project which will impact on the supplier of these goods and services in terms of the supplying business' income and employment.
- 2.18 There is also **induced** impact – the effects arising from the wages / salaries spent by project employees. Gross salaries cannot be taken in their entirety as benefit to the local

economy as there is leakage in the form of Income Tax, National Insurance contributions and spend on holidays, off-island shopping trips etc. Local spend will go on to support jobs and output in other local sectors such as retail or leisure.

2.19 The table below shows projections in terms of direct, indirect and induced impacts based on contracts awarded to Outer Hebrides contractors.

	<b>Design &amp; Development (£m)</b>	<b>Turbine Manufacture (£m)</b>	<b>Civil Engineering (£m)</b>	<b>Electrical Works (£m)</b>	<b>TOTALS (£m)</b>
Direct	0.34	3.93	3.12	3.54	<b>10.93</b>
Indirect	0.02	0.44	0.68	0.77	<b>1.91</b>
Induced	0.10	0.72	0.68	0.77	<b>2.26</b>
<b>TOTALS</b>	<b>0.46</b>	<b>5.09</b>	<b>4.48</b>	<b>5.08</b>	<b>15.10</b>

2.20 The EIA assumes that 10% of the Scottish contracts for civil engineering and electrical work will be sub-contracted to Outer Hebrides companies and this 10% share will realise £1.3m additional direct impact; £286,000 additional indirect impact; and, £286,000 additional induced impact. The further induced impact (spend on accommodation, food, drink etc) from external contractors working in the Outer Hebrides during the two year construction period has been estimated at £1.29m (86 job years of on-site employment at an average spend of £65 per day).

2.21 Taken together, the direct, indirect and induced impact arising from the project from Outer Hebrides contracts, external contracts sub-contracted locally and external contractors temporarily based in the Outer Hebrides will produce an estimated gross output generated in the Outer Hebrides of £20.87m.

2.22 **Direct** employment has already been estimated at paragraph 2.12. above as 27 FTE's.

2.23 **Indirect and induced** employment during the construction phase has been estimated using Scottish Input / Output Tables for five industry sectors – construction, manufacturing, technical services, operation and general services. Outer Hebrides figures have been obtained from the Social Accounting Matrix (SAM) multipliers contained in the 2003 Western Isles Regional Accounts while Scottish figures have been obtained from the 2004 Scottish Input / Output Tables (Type I – direct and indirect and Type II – direct, indirect and induced).

2.24 Applying these employment multipliers to the on-site employment of 269 person years results in the creation of 142 person years of indirect (67) and induced (75) employment. 142 person years equates to 14 permanent FTE's – 7 indirect and 7 induced. When added to the 27 FTE direct jobs, this gives a total on-site employment of 41.

2.25 The 67 person years of indirect employment will release gross wages of £1.8m, using the average £27,059 average gross full time wage in the Outer Hebrides (source ONS ASHE, 2007). Similarly the 75 person years of induced employment will release gross wages of £2.0m into the local economy. Therefore, £3.8m of gross indirect and induced wages can be added to £4.8m of gross direct wages to give a gross total of £8.6m or £6.5m net.

2.26 If the share of local manufacture could rise from 5% to 15% through the re-activation of Arnish Yard, an additional £7.86m or 7% of total inputs could be captured for the Western Isles. This could lead to the creation of 9.6 manufacturing FTE's over the two years of manufacturing, equating to 96 person hours or 48 people working at Arnish per year. This would release additional gross wages of £2.4m (£1.8m net) into the island economy. In short, 15% of manufacturing at Arnish could increase gross output by £10.18m over two years, gross employment by 120 person years and gross income by £3.1m over two years.

## OPERATIONAL IMPACTS

- 3.1 This section projects the likely operational impacts of the project whether direct, indirect or induced. This is done in gross terms with no allowance for displacement or negative effects.

### Direct Employment

- 3.2 The total number of operational and maintenance FTE jobs is expected to be 15. This compares to the 25 – 30 FTE jobs projected for the original 57 turbine scheme. Average gross salaries for these workers could be in the order of £31,020, based on the average gross wage for a range of similar occupations proposed by the ONS Annual Survey of Hours and Earnings (ASHE) 2007, Scottish figures adjusted for the Outer Hebrides. 80% of these jobs should come from within the Outer Hebrides with 80% of the remainder coming from the rest of Scotland. Under this scenario, direct operational employment will bring gross annual salaries of £372,000 (£283,000 net) into the local economy.

### Direct Output

- 3.3 To arrive at an estimate of direct output anticipated, the developer has made a number of assumptions. The key operational assumptions are that: average turbine availability will be 95%; the load factor will be 35%; and, sale price in GBP per MWh will be in the range £65 - £90. Total energy generated will be 273,981 MWh (maximum capacity multiplied by turbine availability multiplied by load factor). This level of generation could produce income in the range of £18m to £25m annually, depending on current electricity sale prices.

### Indirect Output

- 3.4 Supply chain effects can be calculated as a factor of the main operational cost and where supplies and services are sourced. Total operating costs for the Pairc Windfarm are estimated to be **£11,982,484** per annum. This figure includes transmission, maintenance (turbines and infrastructure), land rental, rates, insurance and community payments.
- 3.5 The developer estimates that 16% of these operational costs (**£1.78m** per annum) could be spent in the Outer Hebrides. This is the indirect output consisting of supplies and services required to run the windfarm.

### Induced Output

- 3.6 Scottish Input / Output Multipliers are then applied to the indirect output of £1.78m per annum to estimate the induced output – the effects generated in the wider economy by the salary spend of the direct and supply chain employees associated with the project. In this case, the indirect output for the Outer Hebrides (£1.78m per annum) could give rise to an induced equivalent of **£1.19m** per annum giving a total indirect and induced impact of £2.97m per annum. For information, the total indirect and induced impact for the rest of Scotland is estimated as £7.72m per annum.
- 3.7 As stated in paragraph 3.2 above, it is expected that 15 direct operational jobs will be created with 80% (12 jobs) based in the Outer Hebrides. Using ONS average wage rates, these 12 jobs will generate an estimated £208,000 gross annual income (£158,000 net) in the Outer Hebrides. Income generated in the rest of Scotland will be £212,000 gross (£161,000 net). The Economic Assessment breaks this total of £208,000 per annum into £111,000 indirect and £97,000 induced and, when added to the £372,000 direct income, this gives a total Gross Operational Income of £580,000 per annum into the Outer Hebrides economy.

## COMMUNITY IMPACTS

- 4.1 Local community benefit will arise from two sources of windfarm revenue:
- land rental
  - contribution to community funds

### Land Rental

- 4.2 Land rental has been calculated on the basis of an initial one-off payment of £1,000 per MW installed, based on the stated output capacity of 94MW. This gives rise to a single, one-off payment of £94,000.
- 4.3 Thereafter, annual rental is based on throughput at £1 per MWh plus 5% of ROC (Renewable Obligation Certificate) recycle value. Based on today's figures, this formula could release rental income of £338,716 per annum (excluding the one-off £94,000 payment). Over the lifetime of the windfarm, it is estimated that rental payment will fall within the range £277,000 per annum to £477,000 per annum, depending on current ROC recycle values. Total land rentals during the projected 25 year operational lifespan of the project will therefore be between £6.9m and £11.9m.
- 4.4 It would normally be expected that land rental income will be split 50/50 between the landowner and the shareholders in the Common Grazings. The impact of this investment will obviously depend on how much of it is spent locally. In the case of Pairc, the landowner has another property outside the Outer Hebrides so it would be reasonable to assume that 50% of his income will be spent off-island. The Common Grazings shareholders, on the other hand, would be expected to spend in the region of 75% of their income within the Outer Hebrides.
- 4.5 Standard multipliers are then applied to these figures to estimate the local impacts, in terms of jobs and output, from the rental income paid to the landowner and Common Grazings shareholders. The Economic Impact Assessment assumes that one job will be created for every £94,000 of community output, based on Turnover per Employee ratios (construction) from the ONS Annual Business Inquiry. This figure is lower in the Outer Hebrides (£94,000) than in the Rest of Scotland (£103,000). This could result in the creation of 6 local FTE jobs.

#### **Community Benefit**

- 4.6 In addition to the land rental payments outlined above, Scottish & Southern Energy plc will offer the immediate surrounding communities a package of benefits. These benefits will be split between Pairc (50%), Kinloch (30%) and Western Isles Development Trust (20%).
- 4.7 The total value of this package of benefits is within the range £270,000 to £370,000 per annum made up of a throughput payment, lump sum payments and contribution towards an energy efficiency fund. At today's prices, this payment would be £306,000 per annum.
- 4.8 Over the 25 year lifetime of the Pairc windfarm, a total of between £6.75m and £9.25m will be paid to the local community, excluding land rental payments of between £6.9m and £11.9m.
- 4.9 The following table summarises the anticipated community benefits:

<b>Beneficiary</b>	<b>Lifetime (£)</b>	<b>Per annum (£)</b>	<b>Jobs created</b>
Pairc (50%)	3,528,075	141,123	3.7 FTE
Kinloch (30%)	2,116,850	84,674	2.5 FTE
WIDT (20%)	2,011,250	80,450	3.7 FTE
<b>TOTALS</b>	<b>7,656,175</b>	<b>306,247</b>	<b>10 FTE</b>

- 4.10 An independent assessment commissioned by Western Isles Development Trust in December 2005 ('Impact of Community Benefit Payments') proposes a different multiplier for the local context to that used by the developer. According to that piece of work, community capital development projects in the Outer Hebrides will create 1 FTE year of employment per £80,000 of capital expenditure and revenue spend on staff will create 1 FTE per £35,000 of staff expenditure. Assuming that the community undertakes a mix of capital and revenue projects, an average expenditure figure of £60,000 per FTE created would be reasonable. Applying this bespoke multiplier to the developer's midpoint community benefit figure (£7,656,175 over 25 years) gives 127.6 person years of employment, equating to 12 FTE jobs over 25 years. This compares to 10 FTE's proposed by the developer so the developer's methodology is considered reasonably robust.

- 4.11 Taken together, the gross output from land rental and community benefit will release 18 FTE gross jobs – 6 FTE from land rental payments and 12 FTE from community benefit payments.

#### **Wider Cumulative Economic Benefits**

- 4.12 Pairc windfarm will give rise to 'shadow effects' where an unconnected third party benefits from investment and 'external effects' where there are unpriced impacts on another business due to the actions of a first party.
- 4.13 The local Renewable Energy sector could benefit from supply chain opportunities arising from the potential use of the Arnish fabrication facility but the full impact of this will only be realised if other projects are in the position to procure turbines alongside, or in immediate succession to, the Pairc project.
- 4.14 Grid strengthening to accommodate the Pairc project may also benefit other local schemes but potential is limited due to current Grid policy of only providing reinforcement in response to current applications for connection.
- 4.15 Shadow effects may be felt in the areas of Hydrogen, Research & Development and energy efficiency as these sectors benefit from direct and indirect investment in island renewables.
- 4.16 The scale of the project is likely to produce a good number of well paid, skilled jobs during construction and operation while not being of a scale to produce 'boom and bust' effects in the local economy. Lews Castle College UHI will benefit from the increased demand for training, research and renewable related qualifications. There may be a limited knock on effect for other employers in terms of temporary wage and price inflation in the construction sector but, again, the scale of the project is such that this effect should be manageable.
- 4.17 A Visit Scotland survey in 2002 found that the majority of visitors were at least conditionally positive towards wind farm development from a tourist perspective, the main conditions relating to micro-siting and visual intrusion with a preference for smaller scale developments. Other studies indicate that wind farms do not deter tourists from visiting such areas in the future even though the main reason for their visit is for the beautiful scenery and views. There may be a small, negative impact of wind farms on tourism but any employment losses are likely to be less than the new jobs created. By 2013, climate change imperatives are likely to move opinion in favour of wind farms, even in the most scenic locations.
- 4.18 While the Pairc wind farm will increase population through direct employment, its effects in this area are unlikely to be significant. The Economic Impact Assessment suggests that population could rise by 14 as a result of the project.
- 4.19 The Economic Impact Assessment concludes that, while there may be displacement in the construction and tourism sectors, it is likely to be small in scale with no significant or material negative impact over the longer term.

#### **CONCLUSIONS**

- 5.1 The Pairc Wind Farm will comprise twenty six 3MW turbines with an installed capacity of 94MW. Construction is scheduled to start in 2011 with the wind farm complete and operational by 2013.
- 5.2 The capital cost of the windfarm will be £107.6m with 10% of inputs (£10.93m) sourced from within the Outer Hebrides. This assumes a 5% share of turbine manufacture work, costed at £3.93m. If Arnish Point fabrication facility is in a position to take advantage of Pairc Windfarm contracts, this local share of manufacture could feasibly rise to 15% and an additional £7.86m of inputs could be captured for the Outer Hebrides.
- 5.3 The two year construction phase will give rise to 85 FTE jobs, of which 13 FTE's will be undertaken by local contractors. On site employment will release total gross salaries of £7,014,080 over the two years of construction. Following deductions, net 'take home' pay of £3.6m could accrue to workers resident in the Western Isles. Indirect and induced employment during construction will be in the order of 14 FTE jobs and could release a further £6.5m of net income into the economy.

- 5.4 Total operating costs for the Pairc Wind Farm are estimated at £11,982,484 per annum, of which £1.78m per annum will be spent locally on supplies and services. There will be an additional £1.19m of local induced output.
- 5.5 Direct employment through operation and maintenance of the wind farm is expected to be 15 FTE jobs with 12 based in the Outer Hebrides. This could bring £208,000 of gross annual salaries into the local economy. When added to indirect and induced outputs, this gives a total of £580,000 per annum in Gross Operational Income for the Outer Hebrides economy.
- 5.6 Total land rentals over the projected 25 year lifespan of the wind farm will be between £6.9m and £11.9m. It is assumed that land rentals will be split 50/50 between the landowner and shareholders in the Common Grazings. 6 local FTE jobs could be created through these rentals.
- 5.7 The developer will make a package of benefits available to surrounding communities and Western Isles Development Trust. The total value of this package at today's prices is £306,000 per annum or £7.65m over the lifetime of the wind farm. Investment of this scale could create 10 FTE jobs in the local economy.
- 5.8 Wider 'shadow' and 'external' benefits will accrue in the local renewable energy, Hydrogen, research, education and tourism sectors. These outputs are referenced in the Economic Impact Assessment but it is not possible to accurately value their impact in terms of jobs or cash investment.
- 5.9 The overall impact from the construction and operational phases can be summarised as follows:

<b>Development and Construction Phase</b>	<b>Assessment FTE's</b>
Development and Construction	13

<b>Operational Phase</b>	<b>Assessment FTE's</b>
Wind Farm Employees	15
Rental Payment Employees	6
Community Fund Employees	12
<b>TOTALS</b>	<b>46</b>

**PROPOSED TERMS AND PLANNING CONDITIONS  
FOR PAIRC WIND FARM - APRIL 2009**

**PROPOSED TERMS**

It is recommended that any permission granted by the Scottish Ministers should be subject to the following:

1. Before any permission is issued by the Scottish Ministers, legal agreements shall be secured between Comhairle nan Eilean Siar, the applicant and any other relevant party holding an interest in the land under Section 75 of the Town and Country Planning (Scotland) Act, 1997, or any other appropriate enactment, to secure the following:
  - Decommissioning of the project and restoration of the site;
  - Any mutually agreed terms for community benefit, procurement, and jobs to be created directly;
  - Off site works required to implement the Transportation Management Plan and any compensation measures that cannot otherwise be guaranteed;
  - The appointment of specialists to oversee the development; and
  - Agreement of restoration measures shall be dealt with by the submission of an outline Decommissioning and Restoration Plan prior to commencement of any development or any other date as agreed within legal agreements referred to above.
2. Before any permission is issued by the Scottish Ministers, the following information and clarification should be sought in order to inform the terms of any conditions:
  - a) Clarification of the application site requiring the submission of a site layout plan with a definitive site boundary marked in red.
  - b) Clarification of the operational life of the development.
  - c) An assessment of wind shear.
  - d) An assessment of the potential effects of shadow flicker.
  - e) An assessment of the impact on Maritime Communications.
3. Before any development commences, arrangements shall be agreed between the applicant and Comhairle nan Eilean Siar for establishing, staffing and funding the following essential watching/monitoring roles:
  - a) Environmental Management Committee; to comprise the developer, Comhairle nan Eilean Siar, Scottish Natural Heritage (SNH), Scottish Environmental Protection Agency (SEPA), Western Isles Fisheries Trust (WIFT)/ Western Isles District Salmon Fisheries Board (WIDSFB), Scottish Water, NHS Western Isles, any other relevant environmental interest and local community interests relevant to the area of work being undertaken at the time.
  - b) An ecologist; an archaeologist; a Roads and Traffic Management Officer and a Planning Conditions Monitoring Officer.
4. In addition to the above, any permission(s) issued by the Scottish Ministers should be subject to the planning conditions contained in the attached Schedule of Proposed Conditions.

## SCHEDULE OF PROPOSED CONDITIONS 2009

- Condition 1** The development to which this permission relates shall commence within five years from the date of this permission.
- Reason* To comply with Sections 36 and 37 of the Electricity Act, 1989 and Section 58 of the Town and Country Planning (Scotland) Act, 1997.
- Condition 2** This consent shall expire 25 years after the date of first generation to the Grid commences, and the planning authority should be notified in writing when generation to the Grid commences. Within two years of the expiry date the wind turbines, wind monitoring masts and other fixtures associated with the development shall be removed and the site restored in accordance with the approved Decommissioning and Restoration Management Plan to the satisfaction of the Comhairle as planning authority unless a renewal of permission has previously been granted.
- Reason* To maintain a measure of control over temporary development in the interests of visual amenity and to allow the size and make up of the development to be re-assessed in the light of renewable energy production technology and opportunities prevailing at that time.
- Condition 3** The development to which this planning consent relates shall be carried out in accordance with Addendum submitted January 2009.
- Reason* In order to define the permission, and in order to safeguard amenities, landscape, natural and built heritage resources.
- Condition 4** No development to which this permission relates shall commence until the information required in conditions 7-12, 15-17, 22, 24, 26-31, 34-35, 40, 48-49, 51,59 and 60 of this permission have been submitted to and agreed in writing by the Comhairle, unless otherwise agreed in writing by Comhairle nan Eilean Siar.
- Reason* In order to define the permission and avoid doubt.
- Condition 5** Before development commences details of any alternative lay down area required as a result of the amendments outlined in condition 3 shall be submitted to and agreed in writing by the Comhairle.
- Reason* In order to define the permission, and in order to safeguard amenities, landscape, natural and built heritage resources.
- Condition 6** All of the transmission lines within the site, relating to this development, shall be underground.
- Reason* For the avoidance of doubt and in order to safeguard amenities, landscape, natural and built heritage resources.
- Condition 7** The following Management Plans shall be submitted to the Comhairle:
- (a) **Transportation Management Plan** (including any off-site works schedule referred to in the Section 75 agreement)
  - (b) **Housing Management Plan**
  - (c) **Construction Method Statement**
    - 1. **Nature Mitigation and Compensation.**
    - 2. **Fisheries Management.**
    - 3. **Rock extraction, batching plant and water extraction.**
    - 4. **Pollution.**
    - 5. **Health and Safety.**
    - 6. **Peat Management.**
    - 7. **Post Construction Restoration.**
    - 8. **Water crossings.**

- 9. Outline Decommissioning and Restoration Management Plan
- 10. Public Health Management Plan
- 11. Otter Management Plan
- 12. Habitat Management Plan

No part of the development to which this permission relates shall commence until the Comhairle has issued approval of a, b, c, d, e and f of the Management Plans in writing following consultation with other members of the Environmental Management Committee. The development shall then be carried out and retained throughout the life of the development in compliance with the approved Management Plans unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In order to ensure proper management of the development.

**Condition 8** Prior to any turbine being erected in any of the identified groupings of turbines, a plan at a scale of 1:500 (or alternative scale as may be agreed in writing beforehand with the Comhairle) shall be submitted to the Comhairle to indicate the detailed siting of the turbines that shall not be allowed to microsite more than 50 metres from the centroid of each turbine location shown on the approved plans unless agreed otherwise by the Comhairle following consultation with the Environmental Management Committee.

*Reason* In order to ensure proper management of the development.

**Condition 9** Details of the materials and colours to be used for the external walls, roofs, windows and doors of the control building; details of the siting and external appearance of any temporary compound buildings or fixed plant and machinery; and details of the precise nature, size and colour of the turbines shall be submitted for approval by the Comhairle. No part of the development to which this permission relates shall commence until the Comhairle has issued approval of the details in writing. The development shall then be carried out and retained throughout the life of the development in compliance with the approved details unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In the interests of the visual amenity of the area.

**Condition 10** The Construction Method Statement referred to in Condition 3 shall include and comply with the terms of Conditions 19-43 listed below. No part of the development to which this permission relates shall commence until the Comhairle, in consultation with the Environmental Management Committee has issued approval of the Construction Method Statement. The development shall then be carried out and retained throughout the life of the development in compliance with the approved details unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In order to ensure proper management of the development.

**Condition 11** The Outline and Final Decommissioning and Restoration Management Plans shall be submitted to and approved by the Comhairle as planning authority as agreed in the Section 75 planning agreement. All decommissioning and restoration work shall be carried out in accordance with the approved plan to the satisfaction of the Comhairle.

*Reason* In order to ensure proper management of the development.

**Condition 12** Arrangements shall be made between the applicant and Comhairle nan Eilean Siar for establishing an Environmental Management Committee and for the appointment of an ecologist; an archaeologist; Roads and Traffic Management Officer; a geo-technical engineer; ecological clerk of works and a planning conditions monitoring officer. No part of the development to which this permission relates shall commence until the Comhairle has issued approval of the arrangements in writing. The approved arrangements shall then be retained throughout the life of the development unless agreed otherwise in writing with the Comhairle as planning authority.

*Reason* In order to ensure proper management of the development.

**Condition 13** In the event that any of the members of the Environmental Management Committee raise concerns in writing (which may include an email message) regarding the proposed works, or the implementation of the works, that cannot be resolved through discussion with the developer, such concerns should be considered at a meeting of the Environmental Management Committee that shall be called to take place no later than three working days from the submission of the written concern. Works that are the subject of the written concerns and are not in accordance with the Construction Method Statement shall not take place or continue until the Comhairle has indicated in writing. Thereafter such findings shall be followed unless the developer disagrees, in which case the developer may be heard by the relevant panel or committee of the Comhairle, the findings of which shall be final (without prejudice to any right of appeal against this condition).

*Reason* In order to ensure proper management of the development.

**Condition 14** The developer shall afford access on the site at all reasonable times to the archaeologist, ecologist and planning conditions monitoring officer appointed in accordance with Condition 12 above (and/or to their nominees) and shall allow them to observe work in progress and record items of interest and finds. Notification of the commencement date shall be given by the developer to the archaeologist, ecologist and planning conditions monitoring officer in writing not less than 14 days before development commences and, thereafter throughout the life of the construction works, a weekly written notification of the proposed programme of works for the following four weeks or for a period to be agreed beforehand in writing with the planning authority, shall be submitted to the archaeologist, ecologist and planning conditions monitoring officer. Any concerns raised by the archaeologist, ecologist and planning conditions monitoring officer over the programme or methods of working shall, in the first instance, be referred to the developer and, if not resolved by mutual agreement, shall be referred to the Environmental Management Committee where after the procedures outlined in Condition 11 above shall apply.

*Reason* In order to ensure proper management of the development and proper recording and protection of items of archaeological or ecological interest.

**Condition 15** Before development commences on site, details of a scheme for monitoring the impact of the development on birds shall be submitted for the written approval of the Comhairle in consultation with SNH. Such monitoring shall include regular recording of bird strike casualties in particular. An annual report, over the first three years of operation summarising the results of monitoring, shall be submitted to the Comhairle in consultation with the Environmental Management Committee for consideration and for suggestions for any remedial, mitigation or compensation action.

*Reason* In order to establish effective monitoring in the interests of ornithology.

**Condition 16** Before development commences on site, details of a scheme to mitigate against potential adverse impacts on white-tailed eagles shall be submitted for the written approval of the Comhairle in consultation with SNH. Such measures shall be retained throughout the life of the development unless otherwise agreed in writing by the Comhairle.

*Reason* In order to minimise any effect on the white-tailed eagles.

**Condition 17** Details of the method for monitoring design and construction of site roads and clarification of the observational method shall be submitted (The Observational Method in ground engineering is a continuous, managed, integrated, process of design, construction control, monitoring and review that enables previously defined modifications to be incorporated during or after construction as appropriate. All these aspects have to be demonstrably robust. The objective is to achieve greater overall economy without compromising safety - CIRIA Report 185).

*Reason* In order to ensure proper management of the development.

- Condition 18** Every 5 years from the date of commencement referred to in Condition 2, a report shall be submitted to the Comhairle reviewing the operational arrangements and controls of the development.
- Reason* *In order to ensure the application of the most appropriate environmental controls in the interests of amenity.*
- Condition 19** The route of new tracks should be pegged out well ahead of construction operations, at least 500m in advance of required operations and shall be inspected and approved by the on site ecologist and the Comhairle in consultation with the Environmental Management Committee before construction of the relevant section proceeds. Construction of the relevant section shall then only proceed following approval of the line and methods by the Comhairle.
- Reason* *In order to ensure proper management of the development in the interests of the habitat, fauna and fisheries.*
- Condition 20** Prior to the commencement of development the working areas, including the new access roads, shall be taped off or otherwise demarcated to ensure that no vehicle movements take place across the peatlands outwith the working area.
- Reason* *To ensure site ground disturbance is kept to a minimum in the interests of nature conservation.*
- Condition 21** All parking associated with the construction and maintenance of the site shall be accommodated within the areas demarcated as working areas / compounds unless otherwise agreed in writing with the Comhairle as Planning Authority.
- Reason:* *To ensure site ground disturbance is kept to a minimum in the interests of nature conservation.*
- Condition 22** Details of arrangements to be made to ensure no spread of mud or other materials onto the public highways shall be submitted for approval by the Comhairle.
- Reason* *In order to ensure safety of traffic on the public highway*
- Condition 23** Before any of the principal development commences, the developer shall carry out trial excavations of access tracks and turbine bases in a wet time of the winter and in locations to be agreed beforehand with the Comhairle, in consultation with the Environmental Management Committee, in order to fully assess potential difficulties and learn from any problems that arise. Any knowledge gained to reduce the environmental impact shall be incorporated into the Construction Method Statement and changes agreed in writing by the Comhairle as Planning Authority.
- Reason* *In order to test and refine construction methodology in the interests of in the interests of the habitat, fauna and fisheries.*
- Condition 24** In respect to each of the rock source and batching plant areas, details of the proposed operation and restoration work shall be submitted to the Comhairle in consultation with the Environmental Management Committee. The submission will establish the following details at each rock source and batching plant area:
- Site set up, including details of any buildings, plant and machinery;**
  - Drainage, and management of site run off;**
  - Dust control methods;**
  - Overburden Storage;**
  - Extraction methods;**
  - Restoration plans, specifications, timescale and a ZVI diagram.**
- Restoration shall be undertaken in accordance with the terms and details approved following submission in accordance with f) above.**
- Reason* *In order to ensure proper planning control over the design and operation of the rock source/quarry areas.*

- Condition 25** A hydrological and hydro geological survey shall be carried out to determine the effects on the surface and ground waters supplying any public water supply or private water supply catchment areas together with a survey of the direct effects within such catchments.
- Reason* *In order to ensure construction works do not harm water supplies.*
- Condition 26** Details of foul drainage arrangements for all forms of permanent or temporary accommodation shall be submitted for approval by the Comhairle.
- Reason* *In the interests of public health.*
- Condition 27** Details of water supply arrangements, both during construction and subsequently, shall be submitted for approval by the Comhairle.
- Reason* *In the interests of public health and to ensure protection of the local water supply system.*
- Condition 28** A detailed drainage plan including a Drainage Impact Assessment shall be submitted for approval by the Comhairle.
- Reason* *To ensure minimal impact on the site hydrology.*
- Condition 29** Details of a method statement for discharges from dewatering operations shall be submitted for approval by the Comhairle, in consultation with the Environmental Management Committee. Such method statement shall require that no water from foundation dewatering operations shall be discharged directly into a watercourse. Where necessary, settling ponds and buffer strips shall be installed to remove sediment from pumped water. This statement shall include best practice in accordance with Scottish Environment Protection Agency's Advice.
- Reason* *In order to ensure proper management of the development in the interests of the habitat, fauna and fisheries.*
- Condition 30** Details shall be submitted for approval by the Comhairle, in consultation with the Environmental Management Committee, of the design, flow rates and likely effluent composition of the discharges from the cement batching compounds, the various proposed silt attenuation structures and any other discharges to the water environment and dilution available in receiving waters at low flow conditions for each of the proposed discharges.
- Reason* *In order to prevent pollution and silting in the interests of the habitat, fauna and fisheries.*
- Condition 31** Details of Pollution prevention methods, taking account of SEPA's Guidance regarding use and design of oil interceptors and requiring provision of oil spill kits at fuel depots and on each on site vehicle shall be submitted for approval by the Comhairle.
- Reason* *In order to prevent pollution in the interests of public health the habitat, fauna and fisheries.*
- Condition 32** Unless agreed otherwise in writing beforehand by the Comhairle, Construction work, (including any form of quarrying, blasting, crushing or batching) shall take place only within the hours of 0700 to 1900 Mondays to Fridays and from 0700 to 12 noon on Saturdays and not at all on Sundays. Any construction activity involving audible noise at the nearest noise sensitive property, from cutting, hammering or welding shall be subject to the foregoing hours, unless specific exceptions have received the prior approval of the Comhairle as Planning Authority in writing.
- Reason* *In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.*
- Condition 33** Unless agreed otherwise by the Comhairle (for example under the terms of the Transportation Management Plan) throughout the life of the development to which this permission relates, access to the site by heavy goods vehicles shall be restricted to the access to the site (1 km to the west of Tabost on the B8060) and from 0700 to 1900 on Mondays to Fridays and from 0700 to 12 noon on Saturdays with no such access on Sundays.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

**Condition 34** Details of the location and methods for any blasting operations (to include a method statement from a qualified shot blaster) which are to be undertaken in any part of the development are to be submitted to and approved by the Comhairle. Any blasting on the site shall be undertaken in accordance with the details approved in compliance with this condition unless agreed otherwise in writing with the Comhairle.

*Reason* In order to safeguard birds, fish and other fauna and the safety and amenities of people and structures in the area.

**Condition 35** Details of the methods and locations for measuring any blasting which is to be undertaken to prepare the site shall be submitted for approval by the Comhairle.

*Reason* In order to safeguard birds, fish and other fauna and the safety and amenities of people and structures in the area.

**Condition 36** Following compliance with conditions 34 and 35, the results of the first blast shall be referred to the Comhairle as planning authority and no further blasts shall be undertaken until the planning authority has indicated in writing that it is satisfied with the blasting methods being used, where after blasting shall continue in accordance with these methods throughout the period of blasting to the satisfaction of the Comhairle.

*Reason* In order to safeguard birds, fish and other fauna and the safety and amenities of people and structures in the area.

**Condition 37** Noise from activities involved in the construction of the development hereby permitted shall be limited to a level of 55 dB  $L_{Aeq, 10hr}$  at any time at any residential property. Providing that this condition shall only apply to dwellings or other Noise Sensitive Premises existing at the date of this Permission.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

**Condition 38** Unless otherwise specified below, all construction activities shall be undertaken in accordance with good practice as set out in BS5228 (1997) Noise and Vibration Control on Construction and Open Sites.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

**Condition 39** At the request of the Comhairle as Planning Authority, following a valid complaint to the Comhairle relating to noise emissions from the construction phase, the developer shall measure, at its own expense, the level of noise emissions from the site, by the methodology in Annex E of BS 5228 (1997) Noise and vibration control on construction and open sites.

*Reason* In order to protect the occupants of nearby premises from nuisance caused by noise and disturbance.

**Condition 40** Details of the reinstatement of the wind turbine plinths and the hardstandings for the crane required in connection with the turbine foundations; and details of the reinstatement of land disturbed by the insertion of underground cables shall be submitted for approval by the Comhairle in consultation with the Environmental Management Committee. Such details shall include provision for the surface of each tower base to be at least 0.5m below adjacent land surface levels and shall include for reinstatement of the edges of the access tracks to leave them at the minimum width needed to allow necessary service access during the operational period. The details to be submitted shall also include the size of the operating area around plinths, storage of removed peat/soil and type of crane hardstanding to be formed and details of the vegetation types to be used. Such reinstatement shall be carried out up to the base mounting and retained throughout the life of the development in compliance with the approved details.

*Reason* To reduce the impact of the proposed development into the surrounding landscape in the interests of nature conservation and visual amenity.

**Condition 41** The approved reinstatement shall be carried out in accordance with the approved scheme referred to in Condition 40 and shall be carried out progressively for each turbines within 12 months of commissioning of the turbine unless any variation of the approved scheme has been agreed in writing by the Comhairle as planning authority beforehand. The approved reinstatement scheme shall then be maintained throughout the life of the development.

*Reason* In order to ensure the implementation of the approved landscaping in the interests of the amenity of the area.

**Condition 42** All land disturbed by the insertion of underground cables shall be reinstated within six months of completion of the said works to the satisfaction of the Comhairle as planning authority in consultation with the Environmental Management Committee.

*Reason* In the interests of visual amenity and nature conservation.

**Condition 43** All compound, laydown and materials storage areas shall be constructed with a geotextile or geogrid base unless agreed otherwise beforehand in writing with the Comhairle. Prior to the creation of any such areas full details for their restoration shall be agreed in writing with the Planning Authority, in consultation with the Environmental Management Committee. Within six months of turbines becoming operational, all temporary buildings, containers, machinery and equipment shall be removed and the temporary compound/laydown area and materials storage area shall be fully restored to the satisfaction of the Comhairle in consultation with the Environmental Management Committee.

*Reason* In the interests of visual amenity and nature conservation

**Condition 44** The Wind Farm Operator shall log wind speed and wind direction data continually and shall retain the data, which has been obtained for a period of no less than the previous 12 months. The data shall include the average wind speed in metres per second for each 10-minute period. The measuring periods shall be set to commence on the hour or in 10-minute increments thereafter. The wind speed data shall be made available to the Comhairle as Planning Authority on request. The data shall be provided on a Microsoft Excel spreadsheet in electronic format. In the case where the wind speed is measured at a height other than at 10m, the data shall be supplemented by adjusted values, which allow for wind shear, normalised to 10m height. Details of the wind shear calculation shall be provided.

*Reason* To provide information necessary for accurate assessment of noise impact.

**Condition 45** At wind speeds not exceeding 12m/s, as measured or calculated at a height of 10m above ground level at the nearest wind monitoring mast; the wind turbine noise level at any dwelling or other noise sensitive premises shall not exceed:-

- (a) during night hours, 38dB LA90,10min, or the Night Hours LA90,10min Background Noise Level plus 5dB(A), which ever is the greater;
- (b) during Quiet Waking Hours, 35dB LA90,10min or the Quiet Waking Hours LA90,10min Background Noise Level plus 5 dB(A), which ever is the greater.

In this condition,

**“wind turbine noise level”** means the rated noise level due to the combined effect of all the wind turbines, excluding existing background noise level but including any tonal penalty incurred under the methodology described in ETSU-R-97, pages 99-109.

**“Background Noise Level”** means the ambient noise level already present within the environment (in the absence of noise generated by the development) as measured and correlated with Wind Speeds.

**“wind speeds”** means wind speeds measured or calculated at a height of 10 metres above ground level on the wind farm site at the wind monitoring mast nearest to the premises of interest by reference to Figure 3 of the Farr Wind Farm, Environmental Statement, Volume 3, Volume of Figures, September 2002.

**“Night Hours”** means 23:00 – 07:00 hours on all days.

**“Quiet Waking Hours”** means 18:00 – 23:00 hours on all days, plus 07:00 – 18:00 on Sundays and 13:00 – 18:00 hours on Saturdays.

**“Noise Sensitive Premises”** means premises, the occupants of which could be exposed to noise from the wind farm and includes hospitals, residential homes, nursing homes, etc.

*Reason* To protect the amenity at noise sensitive premises.

**Condition 46** At the request of the planning authority, following a valid complaint to the planning authority relating to noise emissions from the wind turbines, the company shall measure, at its own expense the level of noise emissions from the wind turbines. The measurement and calculation of noise levels shall be undertaken in accordance with “The Assessment & Rating of Noise from Wind Farms”, September 1996, ETSU report number ETSU-R-97 having regard to paragraphs 1-3 and 5-11 inclusive, of the Schedule, pages 95 to 97; and Supplementary Guidance Notes to the Planning Obligation, pages 99 to 109.

*Reason* To quantify the loss of amenity at noise sensitive premises resulting from the operation of the windfarm.

**Condition 47** Should the noise levels in the foregoing condition be exceeded, the company shall take steps to ensure that noise emissions from the wind farm are reduced to the aforementioned noise levels or less.

*Reason* To ensure adequate mitigation is in place to protect amenity at noise sensitive premises.

**Condition 48** No development shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation (“the Scheme”) which has been submitted by the applicant and approved by the planning authority. The Scheme shall specify the appointed archaeological contracting company, their staffing and qualifications, and set out measures for the preservation, interpretation and recording of archaeological remains on the application site and, as a minimum shall make provision for the following:

(ix) An advance 10% evaluation on top soil/peat strip in all excavated areas below 250 metres AOD, including cabling, access tracks, borrow pits, crane hardstandings, turbine bases, sub-stations and any other ground disturbance works.

(x) Advance 10% evaluation of the area of any development within 20m of the visible edge of any archaeological remains regardless of elevation AOD.

(xi) Provision for the excavation of identified sites, or preservation in site and appropriate re-routing/relocation of elements of the development as appropriate.

(xii) A full watching brief on all remaining unexcavated areas of ground disturbance.

(xiii) Provision for the pale environmental sampling of any basins located during the stripping of top soil/peat, an appropriate sampling for other purposes, including but not limited to, dating, species identification and soil micromorphology.

(xiv) Provisions for establishing, staffing and funding the appointment of an archaeologist within the Comhairle, to monitor the implementation of the Scheme.

(xv) The recording of archaeological remains which are not to remain in site and the disposal of finds via the Scottish Archaeological Finds Allocation Panel as required by law.

(xvi) Appropriate arrangements for the publication of results of the archaeological work.

*Reason In order to protect cultural heritage*

**Condition 49** No development shall take place until fencing has been erected, in a manner to be agreed with the planning authority, to protect identified sites of archaeological importance which may be near the development during construction and no works shall take place within the area inside that fencing without the prior agreement of the planning authority.

*Reason In order to protect cultural heritage*

**Condition 50** The developer shall afford access at all reasonable times to the Comhairle's Archaeologist or such other archaeological organisation acceptable to the planning authority and to the archaeological officer appointed pursuant to the Scheme, and shall allow them to observe work in progress and record items of interest and finds. Information as to whom the Comhairle's Archaeologist or other archaeological organisation should contact on site shall be given to the planning authority in writing not less than 14 days before development commences.

*Reason In order to protect cultural heritage*

**Condition 51** An investigation of the site shall be undertaken to establish the nature and extent of any contamination of the site and any necessary remedial works to deal with the contamination. This shall consist of a desk study and risk assessment that complies with BS 10175: 2001; which is current best practice to determine which areas should be targeted in the site investigation and updated risk assessment submitted once the site investigation has taken place. The desk study and site investigation shall consist of separate reports although the site investigation report may include the remediation proposals. No development shall commence until the written approval of the findings and proposed remedial works has been given by the Comhairle as planning authority. The approved remedial works shall then be completed before any of the approved development commences unless agreed otherwise in writing by the Comhairle as planning authority.

*Reason In the interests of habitat, fauna, fisheries and public health.*

**Condition 52** Within six months of the cessation of regular use of any of the wind turbines, such turbine(s), associated hardstanding, any other fitments associated with the development shall be removed and the site restored in accordance with the approved Decommissioning and Restoration Management Plan, unless otherwise agreed in writing with the Comhairle. In the event of the cessation of regular use of all of the wind turbines in any of the identified groups of turbines, any meteorological masts associated with such groups shall also be removed and the site restored in accordance with the approved Decommissioning and Restoration Management Plan. For the purpose of definition, "the cessation of regular use" shall be defined as not being in use for a continual period of six months.

*Reason In order to safeguard the natural qualities of the site.*

**Condition 53** The access tracks to, and all areas around, the turbine bases shall remain unfenced unless agreed to in writing before hand by the planning authority.

*Reason In order to retain open access.*

**Condition 54** No symbols, signs, logos or other lettering (other than those required for health and safety reasons) shall be displayed on any part of the turbines nor any other buildings or structures without the written consent of the Comhairle.

*Reason In order to minimise the visual impact of the proposals in the interests of visual amenity.*

**Condition 55** Throughout the life of the development any extraneous spoil produced in the course of the development shall be tipped only in locations that have previously been agreed in writing as part of the Construction Method Statement

**with the Comhairle in consultation with the Environmental Management Committee.**

*Reason In the interests of visual amenity and nature conservation.*

**Condition 56 Throughout the life of the development turbine blades shall rotate in the same direction.**

*Reason In the interests of safety and visual amenity.*

**Condition 57 No generation of electricity to the grid from the development hereby permitted shall take place until a scheme has been submitted to, approved in writing by and deposited with the Comhairle as planning authority providing for the remediation of any interference to domestic television reception or mobile phone/microwave fixed links caused by the operation of the turbines (such remediation to be at the cost of the Company). The approved scheme shall thereafter be implemented and retained throughout the life of the development to the satisfaction of the Comhairle as planning authority.**

*Reason In the public interest.*

**Condition 58 No part of this development to which this planning permission relates shall commence until details of measures to be followed for the suppression of dust during construction of any part of the development have been submitted to and approved by Comhairle nan Eilean Siar. The approved measures shall then be implemented before development starts and shall be retained throughout construction to the satisfaction of Comhairle nan Eilean Siar.**

*Reason In the interests of the health, safety and amenity of people in the vicinity.*

**Condition 59 No part of this development to which this planning permission relates shall commence until details of measures to be followed for the protection of the wholesomeness and sufficiency of the private water supplies within the site have been submitted to and approved by Comhairle nan Eilean Siar. The approved measures shall then be implemented before development starts and shall be retained throughout construction to the satisfaction of Comhairle nan Eilean Siar.**

*Reason In the interests of public health and in order to ensure that the private water supplies are protected both in terms of wholesomeness and sufficiency.*

**Condition 60 Before the wind turbines hereby approved become operational, a lighting scheme for the installation of obstruction lights shall be submitted to and approved, in consultation with the Civil Aviation Authority by Comhairle nan Eilean Siar. The approved scheme shall be retained throughout the life of the development to the satisfaction of Comhairle nan Eilean Siar.**

*Reason In the interests of air traffic safety.*