Drummuir Estate Wind Farm
Amendment To Planning Application

2003

Volume I of III Non Technical Summary

PREFACE

This document is a Non Technical Summary of the information prepared by RES to provide details and environmental information on an amendment to the planning applications 02/02099/EIA and 02/02139/MIN for a proposed wind farm and three small borrow pits at Drummuir Estate, near Keith in Banffshire, Scotland.

The full document is contained within three separate volumes:

Volume I, this document, is the Non Technical Summary of the Assessment of the Amendment to the Application.
Volume II is the full Assessment of the Amendment to the Application and contains supporting information in appendices.
Volume III contains figures and plans referred to in the text of Volume II.

An updated planning policy statement has also been prepared to accompany the amendment to the application.

This document should be read in conjunction with the original Environmental Statement.

Copies of the full document may be viewed during normal opening hours at the following locations:

Moray Council
Planning Department
High Street
Elgin, Moray
Tel: 01343 543451

Keith Library
Union Street,
Keith
Moray
Tel: 01542 882223

Keith Post Office
146 Mid Street
Keith, Moray
Tel: 01542 888180

Renewable Energy Systems Ltd
Unit 7000
Academy Park
Gower Street
Glasgow, G51 1PR
Tel: 0141 419 1730

Copies of the full document are available from Renewable Energy Systems Ltd, priced £50 each. Further copies of this Non Technical Summary are available free of charge. The Non Technical Summary can also be viewed on the RES web page www.res-ltd.com from the 'Download Factsheets' section.

Requests for this document or the Non Technical Summary should be made in writing, including payment if required, to either Renewable Energy Systems Ltd, Beaufort House, 23 Grosvenor Road, St Albans, Hertfordshire, AL1 3AW, Tel: 01727 797933 or Renewable Energy Systems Ltd, Unit 7000, Academy Park, Gower Street, Glasgow, G51 1PR. Tel: 0141 419 1730.

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INTRODUCTION

In November 2002 Renewable Energy Systems Ltd (RES) applied for full planning permission to Moray Council to construct a wind farm comprising 21 wind turbines on land at Drummuir Estate in Banffshire approximately 6.5km South West of Keith. The turbines proposed were three bladed with a 60m high tower and a 80m rotor diameter with a nominal rated output of 2000kW (2MW) each. The proposed development would also have associated electricity transformers, access roads, a control building and substation compound and two wind monitoring masts. A separate consenting mechanism for the grid connection is being pursued.

This wind farm application was submitted with a full Environmental Statement and the wind farm and borrow pit applications were registered on 12th November 2002, application no's. 02/02099/EIA and 02/02139/MIN.

During the planning and consultation process several issues were raised by consultees. These included:

1. landscape and visual impacts, specifically from two key viewpoints namely from viewpoint 6 (Drummuir/Newburgh on B9115) and from viewpoint C1 (Ben Aigan) – consultation suggested reducing turbine clustering, avoiding turbines being 'visually isolated' from the main wind farm group and minimising the visual impact of access tracks, particularly from the latter viewpoint.

2. impacts on peatland – RES had not demonstrated that the layout had specifically addressed avoidance of more sensitive peatland locations

3. proximity of a particular turbine to a site previously used for nesting by an important bird species, and

4. lack of assessment of cumulative effects with Glens of Foudland wind farm in Aberdeenshire.

These four issues were discussed by RES with Moray Council and SNH so that the concerns were fully understood and so that appropriate amendments to the proposal could be made.

To accord with statutory procedures such amendments to the proposed wind farm application require to be re-notified, re-advertised and re-consulted over 28 days to allow for receipt of representations and consultation responses. As such this document provides the details and environmental information on the amendments to the planning applications for both wind farm and borrow pits, 02/02099/EIA and 02/02139/MIN.

APPROACH TO AMENDING THE DESIGN

The major challenge has been related to improving the visual design of the development. Other issues have been dealt with by modifying areas of constraint (bird-nest site) or by checking residual effects following redesign (protection of peat land).

In redesigning the wind turbine layout and within the flexibility offered by various environmental constraints, RES has adopted an approach that has attempted at the outset to produce visual harmony from the key viewpoints and to modify the layout only if technical and engineering problems are predicted. This is different from conventional practice, which seeks to find a layout that gives maximum energy yield. This layout is then modified only if major unacceptable visual effects result.

A different approach has also been taken with the routing of tracks. The aim at the outset has been to minimise visibility from the key viewpoints. A variety of techniques have been used which ensure that visually obvious long transverse track runs are avoided, as are exposed views along tracks.

Screening by existing forestry and use of hill-tops for the trunk tracks have also been used to minimise track visibility.

THE AMENDED PROPOSAL

The Layout

The wind farm site boundary is the same as the original scheme (see Figure 1). The amended wind farm would comprise 21 wind turbines with the same overall maximum tip height of 100m as proposed in the original application. The turbine and track layout have been amended to address the visual impact from viewpoints 6 and C1, increases the separation from a bird nest site and also considers peat depth. The location of the borrow pits, wind monitoring masts and construction compound have also slightly changed to be located adjacent to the new track layout, to minimise visual impact and to avoid areas of deeper peat. Figure 2 shows the amended layout.

Peat Depth Survey and Peat Enhancement Plan

As requested by SNH during the consultation process, a peat depth survey of this amended layout was undertaken. The main findings of the peat depth survey were that all proposed turbines in the amended layout and the majority of the track layout are located in firm dry ground with shallow peat of less than 0.6m in depth. The mean peat depth over the whole site was only 0.24m and there was no indication of significant areas of deep peat. Two short lengths of the track alignment are proposed over wetter areas and as such floating road construction is proposed in these two locations. The borrow pit locations were amended following the peat depth survey to be adjacent to the new track layout and to avoid areas of deeper peat.

Although the measured peat depths over the site and in the area of the proposed amended layout are very shallow RES commissioned the ecological consultant to draw up a peat enhancement plan for part of the site. This is to ensure that any minor effects on the existing peat through the development of the wind farm are mitigated through enhancement of peat on part of the site.

ENVIRONMENTAL ASSESSMENTS OF AMENDED LAYOUT

Landscape and Visual

In addition to a reassessment of the landscape and visual effects of the amended layout, the Local authority and SNH requested several additional pieces of information and alterations to the visualisations submitted with the original application. They key ones being:

- all the photomontages produced for the amended layout to show the sky an enhanced blue colour to show a worst case scenario
- Cumulative ZVI and wirelines to include Glens of Foudland wind farm in Aberdeenshire
- 5 new cumulative wirelines considering Drummuir, Pauls Hill, Cairn Uish and Glens of Foudland from The Bin Forest, Tap O'Noth, The Buck, Leys of Dummuies NJ558377 and Newtack from the A96(T) to represent views for travellers.

These new visualisations were used by the landscape consultant when assessing the amended layout.

The landscape and visual assessment carried out for the proposed wind farm at Drummuir identifies the potential effects of the wind farm on the landscape and the visual amenity of an area of 25 km radius from the site centre.

The assessment has been based on available best practice guidance. The description of the existing landscape and visual amenity of the study area draws on existing landscape character assessments carried out for the area, which have been verified and amended where necessary through field survey work. The key characteristics of these landscape types have been identified, and an assessment

made of their sensitivity to change as a result of the construction and operation of the proposed turbines.

The assessment has confirmed that the proposed wind farm would affect the existing Upland Moor landscape and alter the general visual appearance of the site during both the construction and operational phases.

The design of the wind farm layout has been an iterative process which has produced an optimal turbine configuration that minimises as far as possible potential landscape and visual effects. This has included several turbine layout changes to ensure that the design looks as good as possible from key local viewpoints and appropriate siting and design of other developments associated with the wind farm such as site tracks, substation, borrow pits and compound.

A detailed assessment of the changes which would occur to the character of the landscape and visual amenity of the study area as a result of the proposed wind farm has been carried out. A visibility analysis has been conducted using Zone of Visual Influence (ZVI) maps based on analysis of the landform of the study area.

It has been concluded that significant landscape effects on the Upland Moor and Agricultural Foothills would be confined to approximately a 5km radius around the development. There would not be any significant landscape effects on the designated Areas of Great Landscape Value (AGLVs) within the study area. A 25km radius study area has been assessed and significant landscape and visual effects arising from the proposed wind farm are anticipated to be confined to a relatively small area, in close proximity to the wind farm site.

A viewpoint assessment for 19 locations agreed with the local authority and SNH at the scoping stage of the project has also been carried out. This has been supported through the use of a computer generated visibility analysis that draws a line of sight across a digital model of the intervening terrain to each turbine, allowing detailed data on visibility to be extracted for each viewpoint. The viewpoint assessment identifies that there may be significant effects on visual amenity along the C55H minor road through the site, on the B9115 in Drummuir/Newburgh (see Figure 3), on the minor road between Loanhead and Bush Farm, on the A95 near Knockan, on the B9014 near the turn off to Loch Park Activity Centre and at Ben Aigan. It is not anticipated that there will be significant effects on visual amenity arising from the Drummuir Wind Farm at any of the other viewpoints.

An assessment of the potential cumulative effects of the Drummuir Wind Farm together with the proposed wind farm developments at Cairn Uish, Paul's Hill and Glens of Foudland, has also been carried out. This identifies that significant cumulative landscape and visual effects may occur at Ben Aigan. The areas most likely to be affected by cumulative visibility are generally situated between the wind farm sites, often from the most elevated parts of the landscape which offer wide panoramic views of the region, but do not contain residential development or major transport routes. Given the distances involved to the wind farms and the small portion of views occupied, the cumulative effects of these developments are considered acceptable.

It should be noted that significant landscape and visual effects caused by the proposed development are not necessarily unacceptable and that they are reversible at the end of the operational life of the wind farm.

Having carefully examined the potential effects on landscape and visual amenity associated with the proposed Drummuir Wind Farm, it is considered that the proposals are acceptable at this location.

Ecology

An ornithological and ecological survey of the site was carried out during April-July 2001. The study area was defined to include all areas in which wind turbines may be located and the areas that could be affected by them, following SNH guidelines.

Bird populations were generally low, but included several species of conservation importance. Three species breeding within the study area were determined to be medium sensitivity (skylark, song thrush and linnet), all due to their inclusion on the priority list of the UK Biodiversity Action Plan (BAP). Two additional medium sensitivity species were observed during the surveys/flight observations, hen harrier and merlin. Neither was found breeding in the study area in 2001, but there are records of merlin using a breeding site in the area at times during the past 10 years.

No significant impacts are predicted on any of the site's ornithological features. There are no important bird concentrations in the area and the site does not support any particularly important species or populations that might be sensitive to a wind farm development. Notwithstanding this, it would still be useful to carry out monitoring of the local breeding birds during and after construction, to determine whether the wind farm had any effect on the local bird populations. If construction of the wind farm were to take place during the breeding season (April-July), then a survey of Schedule 1 species within 1km of the development site should be undertaken immediately prior to construction, so that construction activity does not take place in close proximity to active nest sites.

The vegetation communities and species on the site are typical of upland areas in the region. No nationally rare or scarce plant species were found, though one regionally important species (medium sensitivity) was found; lesser twayblade. The blanket bog habitat is listed as a priority habitat under the EU Habitats Directive, so should be considered to be of medium sensitivity. Planned take of the bog has been minimised and the better condition bog on deeper peat has been avoided. This has at the same time minimised the possibility of any adverse hydrological effects occurring. No significant impacts are predicted on the site's botanical interest or on its peatlands.

RES have agreed to implement a peatland enhancement plan, the aim of which will be to mitigate the small loss of peatland habitat by re-wetting bog areas that have been damaged by drainage. Prior to construction the plan and areas proposed for enhancement will be discussed with the appropriate consultees, and appropriate action agreed and implemented.

Archaeology

The archaeological potential of the study area is low. Within the proposed wind farm area, 30 sites were found. No cultural heritage sites with statutory or non-statutory designations are present within this area. Eight of the sites are considered to be of Local importance. Fourteen other sites are of lesser importance, and eight sites are considered to be of unknown importance.

Many of the features within the proposed wind farm area are associated with medieval or later rural settlement and estate land-use. Few of the sites relate to prehistoric settlement and land-use, although additional, buried sites may await detection.

The development proposals have been assessed against the known cultural heritage of the site. Direct effects have been predicted in relation to eight sites identified by the study. No site would receive a significant direct effect. It is considered that the construction and operation of the wind farm would have no significant indirect effects upon cultural heritage interests. Effects upon currently unidentified, buried archaeological remains are difficult to predict, but are likely to be minor.

In overall terms, it is concluded that the proposed development would have no significant effects upon the known cultural heritage and does not conflict with the aims of national, regional and local planning policy as regards cultural heritage.

Hydrology

The sensitive water features on the site include the Burn of Towie and other streams which radiate from the boundary of the site. A number of the streams that flow from the site supply abstraction water for the Glentauchers Distillery. To the south of the site further water abstractions occur from

private wells and springs. The assessment has considered the effects of the windfarm on each of these features.

Principal issues relating to the development are the introduction of suspended sediments during construction, and the disruption of runoff regimes due to the introduction of access tracks across the site. Proposed mitigation to reduce these effects includes floating roads in wet areas and appropriate roadside drainage. The introduction of mitigation measures has ensured that there would be no effects on the principal sensitive water features e.g. Glentauchers Distillery abstraction.

The construction activities and any routine operational activities would be undertaken with full regard for current best practice and SEPA guidance. This would reduce the likelihood of abnormal or accidental occurrences, as well as ensure that there are response measures in place should such occurrences result e.g. spillages.

The assessment has demonstrated that the residual effects of the development on hydrology would be minimal and are not considered significant. This has primarily been achieved through the identification of sensitive features to inform the design of the wind farm layout.

Noise

The acoustic impact of the amended layout on the local environment has been assessed in accordance with the latest guidance on wind farm noise assessment as issued in the DTI publication 'The Assessment and Rating of Noise from Wind Farms' (ETSU/DTI, 1996 [1]).

Noise levels have been predicted at 12 properties. None of the predicted noise levels exceeds 35.8 dB(A) at any investigated wind speed.

Background noise measurements were made at Gateside, Easterton and Knockan. The measured background noise levels were used to determine indicative noise limits, as specified by the DTI's Noise Working Group (ETSU/DTI, 1996).

The DTI NWG Guidelines recommend that the allowable wind farm noise limit be set to 5dB(A) above the measured background noise level, except where the background noise level falls below the 30dB(A) to 35dB(A) range in which case the limit should be fixed at an absolute level of between 35dB(A) and 40dB(A). Which limit is actually selected depends on a number of factors including the number of dwellings in the neighbourhood of the wind farm, the effect the noise limits might have on the design and productivity of the wind farm and on the duration and level of exposure. A higher noise level is permissible during night-time hours than during day-time ones, as it is assumed that residents would be indoors.

Predicted noise levels at all houses are comfortably within the day-time limit and night-time noise limits at all wind speeds. At a reference wind speed of 8 ms^{-1} noise levels are at between 2.8 and 20.8 dB(A) below the daytime noise limit. At the highest considered wind speed, 10 ms^{-1}, the noise levels are between 8.1 and 26.8 dB(A) below the required daytime limits. Night-time margins are at least 7.6 dB(A) at all dwellings and at all wind speeds.

This assessment indicates that the increase in noise levels resulting from the operation of the proposed wind farm would be low at neighbouring dwellings at all wind speeds. The proposed wind farm would result in the recommended noise limits of the NWG being satisfied at all locations. The effect of the wind farm on the amenity of the local properties would therefore be minor.

[1] ETSU/DTI, (1996). *The Assessment and Rating of Noise from Wind Turbines.* ETSU Report ETSU-R-97, September 1996.

FIGURES