



Seamer Wind Farm

Design and Access Statement

July 2008

BROADVIEW

DESIGN AND ACCESS STATEMENT

1 Introduction

This document is the Design and Access Statement to accompany an Application for Planning Permission to both Stockton-on-Tees Borough Council and Hambleton District Council for the proposed Seamer Wind Farm.

Section 42 of the Planning and Compulsory Purchase Act 2004 substitutes a new section of the Town and Country Planning Act 1990 so as to ensure that a statement covering design concepts, principles and access issues are submitted with an application for planning permission.

Statements should cover both design and access, allowing applicants to demonstrate an integrated approach that will deliver inclusive design, and address a full range of access requirements throughout the design process.

2 Design

2.1 Overview

A design and access statement should explain the design principles and concepts that have been applied to particular aspects of the proposal – these are the amount, layout, scale, landscaping and appearance of the development.

2.2 Amount and Layout of Development

The layout of a wind farm depends on a range of technical, economic and environmental criteria including:

- Distance between turbines – to minimise the turbulent interaction between wind turbines, turbines need to be separated by set distances. Spacing requirements may vary between turbine manufacturers and are also subject to wind conditions;
- Proximity to occupied dwellings – wind turbines have to be located sufficiently far away from houses to protect local amenity in terms of noise and shadow flicker;
- Environmental constraints – features and areas of environmental sensitivity (ecology, archaeology, hydrology etc) are identified and their implications considered;
- Economic Constraints – sufficiently good wind speed to provide economic generation on site;
- Landscape and visual design consideration are taken into account and the layout modified accordingly;

- Existing land use – whilst the wind turbines and their associated infrastructure occupy a small percentage of the site, the existing use of the land is considered in the layout of tracks and turbines;
- Proximity to obstructions - such as tall trees or buildings which can create turbulence in the air flow and reduce the power generated from the site;
- Proximity to other infrastructure such as pipelines, radiocommunication links, roads, public footpaths, bridleways and electricity lines; and
- Proximity to a road network - suitable to allow the transport of construction plant, equipment and wind turbine components to the site.

The main design iterations that defined the final location of the turbines, accounting for the identified environmental constraints are summarised in Table 2.1 below.

Table 2.1 Summary of Design Iterations

| Layout Number | Number of Wind Turbines | Layout Considerations |
|----------------------|--------------------------------|---|
| Layout 4 | 8 turbines | This layout was identified prior to any site parameters being included. This identified the maximum number of wind turbines put forward for the scoping stage. |
| Layout 13 | 6 turbines | A greater separation distance was found to be necessary from the 400kV pylons crossing the site. The standard (6 x 4) separation distance was applied to the turbine layout – to maximise efficiency. |
| Layout 15 | 5 turbines | Layout included new ecological constraints. |
| Layout 19 | 5 turbines | Alternative 5 turbine layout considering all constraints. |
| Layout 28 - proposed | 5 turbines | Layout to include all constraints including input from Landscape Architect and change in turbine separation applied. |

2.3 Scale

The final selection of turbine is likely to be subject to a competitive tendering exercise, should permission be granted. The site has been designed to accommodate five turbines of 2-3 Megawatts in size. The turbines will be of the horizontal axis type, with a rotor consisting of three blades.

For design and appraisal purposes, a generic design has been defined; namely the wind turbines would be of horizontal axis, three bladed design, with a rotor diameter of around 90m and a tower height of approximately 80m. The overall height of the turbines has been limited to 125m above ground level.

2.4 Landscaping

The landscape and visual impact of wind energy proposals are important issues for consideration when planning new developments. The proposal has been subject to a detailed landscape and visual impact assessment and the following design principles have been considered:

- Develop the "most suitable wind farm design" for this site, with the wind farm and associated infrastructure designed to respond to the local landscape character and provide acceptable design solution in terms of scale, layout and visual composition;
- Achieve a simple, balanced, rational and coherent image that may be viewed as an acceptable and positive component of the landscape; and
- Minimise adverse landscape and visual effects on views from key receptors such as local settlements.

No formal landscaping scheme is proposed for the wind turbine development.

2.5 Appearance

It is not possible to provide a detailed description of the exact model of turbines to be installed at the site as the final choice will be established through a competitive tendering process should planning permission be granted. However, the turbines will be to the scale set out in paragraph 2.3 above.

The turbines are proposed to be coloured pale grey with a semi-matt finish to reduce their contrast with the background sky. The turbines would be uniform in colour. An indicative wind turbine is shown within the Environmental Statement drawings.

3 Assessment and Evaluation

3.1 Environmental Assessment

An Environmental Impact Assessment (EIA) of the proposal has been undertaken further to the agreement of the scope with the local planning authorities. The EIA is reported in an Environmental Statement, which includes main text, appendices and drawings.

A number of individual assessments have been undertaken by specialist consultants:

- Landscape and visual assessment;
- Ecological Assessment;
- Ornithological Assessment;
- Cultural heritage assessment;
- Noise assessment;
- Access and Traffic assessment;
- Ground Conditions assessment; and
- Shadow flicker assessment.

The overall conclusion of the landscape and visual impact assessment is that there would be few significant effects on landscape resource, and a limited number of significant and adverse effects on visual amenity within 2.5km of the site. This is considered to be a localised effect in terms of the 16km radius study area assessed.

Strict noise limits will be adhered to throughout the operation of the wind farm to prevent any significant noise effects during site operation.

Careful site design has resulted in minimal effects on features of ecological or ornithological interest, with no significant effects predicted.

The site has been designed to avoid any direct effects on known features of cultural heritage importance. Although there is a possibility that there may be potential effects on previously unrecorded features mitigation is proposed to avoid this. Some cultural heritage features beyond the site boundary will receive visual effects upon their settings, they are considered to be of minor significance only and therefore the impacts are considered to be not significant.

Construction traffic would be carefully routed and managed to minimise adverse effects on road users and those living in the immediate area.

Constraints identified by ground condition assessment (geology, hydrology and hydrogeology) have been avoided and no adverse effects on hydrological, hydrogeological or geological features are predicted.

Shadow flicker has been predicted to occur at a small number of properties surrounding the site. Predictions have been made using worst case assumptions, but in reality meteorological conditions and wind farm operation will reduce the likelihood of shadow flicker by a considerable order of magnitude. Implementation of appropriate mitigation measures would ensure that properties would not be affected by shadow flicker from the proposed turbines.

The proposal has been the subject of detailed consultations with military and civilian aeronautical interests and the developer is obligated to address potential impacts. No outstanding objections are anticipated after submission of the planning applications.

In addition to its broader contribution to reducing greenhouse gas emissions and increasing renewable energy generation, the development will have several minor positive effects on the local economy, through employment opportunities; mainly during the construction phase, and through a local community fund financed by the Applicant.

3.2 Planning Policy

Published national guidance on planning for all renewable energy developments notes the important role wind energy can play in achieving the UK Government's wider economic and environmental goals in relation to energy production, describing increased renewable energy production as 'vital'. The guidance sets down a strong presumption in favour of suitably sited wind farm development.

The Planning Statement which accompanies the applications for planning permission considers the need for the proposal and balances the potential identifiable impacts against its quantifiable benefits in relation to the criteria outlined in key Government planning guidance such as: Planning Policy Statement (PPS)1 Creating Sustainable Communities (and PPS Planning and Climate Change), PPS22 Renewable Energy, the approved development plan documents relating to; Stockton-on-Tees Borough (including North East regional guidance) and Hambleton District (including Yorkshire and the Humber regional guidance).

When considering the limited impact of the proposal on the wider area, it is the view of the Applicant that the Seamer Wind Farm proposal is in accordance with the relevant policy guidance of the Development Plan and other emerging planning policy. In addition it is supported by the positive framework provided by government planning guidance on renewable energy developments.

4 Involvement and Consultation

The Applicant and appointed team of consultants have consulted with a number of organisations for their comments on the proposal. These include Stockton-on-Tees Borough Council, Hambleton District Council, various other neighbouring authorities (including the North York Moors National Park Authority), Highways Agency, Natural England, Tees Archaeology, aviation interests, radiocommunication operators etc. Both local planning authorities consulted widely on the proposal during the scoping process.

Public exhibitions were held in Ingleby Barwick, Stokesley, Seamer and Hilton on 2-4 June 2008 and these were widely advertised locally. These events have been held in order to outline the proposals, answer questions and to receive the views and comments from local residents and general public. In addition, the Applicant has held other events in both Seamer and Hilton during the early stages of the proposal to provide information about the proposal. A dedicated project website has been regularly updated during the development of the proposal.

5 Access

A route and access assessment study for the suitability of potential routes to the proposed site has been undertaken. The proposals have been assessed against relevant policies and guidelines such as PPS 22 (Renewable Energy) and the Institute of Environmental Assessment's Guidelines for the Environmental Assessment of Road Traffic (1993). A number of organisations were consulted prior to the assessment, including Cleveland and North Yorkshire Police, relevant local councils, Network Rail and British Waterways.

Heavy Goods Vehicles (HGVs) would be used to transport material and other plant and machinery to the site. Considering the location of quarries and cement plants it is expected that HGVs would travel along the A19 southbound, then east along the A174, turning south on the B1380 (Low Lane) till it joins the A1044 (Low Lane), again heading south as far as its junction with Hilton Lane and turn left. Hilton Lane passes through the village of Hilton where it becomes Seamer Road which leads to site.

It is proposed that Abnormal Load Vehicles (ALVs) transporting the turbine components would travel from the A19 until the intersection with the A1046; then head north on the A1046 in order to join the A1032; cross over the River Tees and head west on the A66. ALVs would then join the A19 in a southbound direction and head west on the A174, before turning left onto Thornaby Road (A1045), then right to join the A1044. The A1044 Low Lane would be followed until its junction with Hilton Lane, where the vehicles would turn left. Hilton Lane passes through the village of Hilton where it becomes the Hilton/Seamer Road which leads to the site.

Traffic movements associated with the construction of the wind farm have been estimated based on baseline traffic count data obtained during 2006,

and the traffic predicted during 2010 when construction of the wind farm would potentially commence. In order to minimise the impact of construction traffic on the surrounding areas, all heavy vehicles would be required to access and egress the site on the north side of the Hilton/Seamer Road. It is also expected that construction of access tracks and the preparation for the installation of turbines will be carried out in two parts to ease the disruption to traffic on Hilton/Seamer Road.

The assessment of traffic flows show that there will be a maximum hourly increase on the Seamer/Hilton Road of up to 14% in the construction period. However, with the existing low hourly figures on the road, this is not perceived as a significant increase. The overall increase in cars per minute would be an increase from 1.8 to 2.0. These figures assume the worst case scenario for construction traffic (when the concrete bases are poured for the turbine foundations) but the general traffic movement figure will be lower.

It is not expected that maintenance vehicle volumes or other traffic to the site will be frequent and are therefore not to be of concern.

6 Conclusions

The proposed Seamer Wind Farm will contribute to the UK government's target of reducing CO₂ emissions by 20% by 2010, and make a significant contribution to the regional targets for renewable energy production stated in the Regional Spatial Strategies for the North East and Yorkshire and the Humber.

The proposed wind development is strongly supported by local and national policies, targets to promote sustainable development in general, and renewable energy in particular. The Applicant considers that the proposed wind farm accords with planning policy at both a regional and local level.

The EIA of the proposed wind farm has addressed a wide range of potential effects on different aspects of the environment. The emerging findings of the assessment process were integral to the iterative site design process and the final site layout. This process also leads to the identification and development of a range of mitigation measures preventing and reducing any residual negative environmental effects resulting from the proposed wind farm.