Document OF6

Proposed Erection of Domestic Wind Turbine

The Oaks
Macclesfield Road,
Rudyard
Leek Staffordshire
ST13 8PS

Mr and Mrs A N Bould

Design and Access Statement

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RENEWABLE ENERGY SERVICES

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Location

This Design and Access Statement relates to the erection of a domestic wind turbine within the curtilage of The Oaks, Macclesfield Road, Rudyard, Leek Staffordshire, ST13 8PS. The applicants are Mr and Mrs A N Bould who are the owner-occupiers of The Oaks.

The Statement has been prepared in order to set out the context for the proposal in design and access terms, to explain the rationale behind the scheme and how that rationale has evolved to result in the present proposal. The document is based on CABE's "*Design & Access Statements: how to write, read and use them*", published in 2006. The Statement also makes reference to relevant planning policy documents.

Proposal

The proposal concerns the erection of a single, horizontal-axis domestic wind turbine, attached to the north end of the existing barn which is situated near to The Oaks house. The proposed turbine is the Swift Energy System Turbine, manufactured by Renewable Devices Swift Turbines Ltd (RDST). The turbine is the world's first silent mountable wind energy system capable of providing a cost effective renewable energy source for domestic, or small commercial / industrial use.

A detailed technical specification is set out in the Technical and Planning Pack which is submitted in support of this application (Document OF5). Essentially however, the turbine has five blades with a total overall diameter of 2 metres, each blade therefore being 1 metre long.

The barn on which the proposed turbine is to be installed is a steel portal frame structure, some 5.0 metres high. The turbine will be attached to a single vertical galvanised steel pole which will be attached to the central vertical section of the portal frame barn, secured by three mounting brackets and cleats. The mounting brackets will project marginally through the existing profiled cladding on the north end elevation of the barn. The mounting pole will project 1.5 m above the ridgeline of the barn and the total overall height of the turbine will therefore be 7.5 metres above existing ground level.

The Site and Siting

The Oaks is a mature and substantial two-storey detached property, located at the end of a single width access road some 140 metres from the A523 Macclesfield Road, a principal road connecting the towns of Leek and Macclesfield. Towards the rear and north of the farmhouse building is the barn on which the proposed turbine is to be located. The nearest residential property is another farm house and buildings some 300 to the north which has, in winter, only very limited views of the application site by virtue of its remote location. In Spring, Summer and Autumn, the properties are fully screened from each other by intervening trees in leaf. To the north east of the barn is a moderately steep sloping field.

Planning History

There is no planning history at the application site that is relevant to the current proposal.

National Planning Policy

At the national level, the positive impact of renewable energy developments is set out in the supplement to Planning Policy Statement (PPS1) "Planning and Climate Change", published in December 2007. The document supplements PPS1 by setting out how planning should contribute to reducing emissions and stabilising climate change. The PPS sets out a series of Key Objectives, including the need to contribute to delivering the Government's Climate Change Programme and energy policies, and in doing so contribute to global sustainability.

The current proposal is a demonstrable contribution to the objective of reducing carbon based emissions by utilising the energy produced by the wind turbine to reduce the current reliance on such energy sources. Any local approach to protecting landscape and townscape should also be consistent with PPS22 and not preclude the supply of any type of renewable energy other than in the most exceptional circumstances.

Regional Planning Policy

At the regional level, guidance is given in the West Midlands Regional Spatial Strategy (RSS). The RSS is part of the national planning system and its main purpose is to provide a long term land use and transport planning framework for the Region.

Policy CC1: Climate Change
Promotes taking opportunities to both mitigate and adapt to the worst impacts of climate change by, amongst other measures, developing and using renewable energy;

Policy QE3: POLICY QE3 - Creating a High Quality Environment for All
The Policy requires attention to be given to creating a high quality landscape and incorporating sustainability considerations, including renewable energy elements, wherever possible. The current proposal contributes to this aim.

POLICY EN1: Energy Generation
This policy requires Local Authorities to encourage the use of renewable energy solutions in all possible forms, to ensure maximum sustainability and to take account of the extent to which developments assist in achieving wider environmental benefits such as reducing harmful emissions. The proposed turbine will reduce the dependence on non-renewable energy sources and fully supports this policy.

Local Planning Policies

An examination of Appendix 4 of the Staffordshire Moorlands Local Development Scheme 2008-2011 confirms that there are no saved policies which directly relate to the current proposal.

There are certain policies in the SMDC Core strategy which support the proposal. Policy SD1 requires all development to make sustainable use of resources, help to minimise any environmental and amenity impacts and adapt to climate change (Para 6) . The current proposal supports this aim by reducing the reliance of Oaks farm on non-renewable energy sources.

Other Policy Considerations.

Staffordshire Moorlands District Council has a LA21 statement which supports the importance of renewable energy and such new technologies as wind turbines (page 10 of that document. Renewable energy generation schemes not only result in a reduction in CO2 production and global warming but can also bring benefits to local communities. Whilst not a formal planning policy, it is considered that the current proposal gives strong support to these LA21 aims.

Consultation

In developing the proposal, general discussions have taken place with the local authority in order to ascertain the policy framework and context for the proposal. The turbine has then been located so as to accord as far as possible to completely avoid any adverse visual impact, whilst still achieving an acceptable location in energy generation terms.

Design Statement

The key specific issues to be considered in relation to wind turbines are:

- Visual Impact
- Noise
- Telecommunication Interference
- Bird Strike

Visual Impact

In terms of visual impact, it will be seen that the proposed turbine is sited some 140 metres from the A523 and 300 metres from the nearest property. To the east of the application site is a steeply sloping field which prevents any view of the site from that direction and provides an effective and substantial backdrop to the site. These characteristics, together with the modest size and domestic nature and scale of the proposal, will render the turbine virtually invisible from any public perspective and of

no adverse impact on the local landscape or from a residential amenity point of view.

"Flash" is the term applied to situations where the sun can sometimes be reflected off the rotor blades of a turbine to create a flashing impression from certain angles.

To minimise the occurrence of 'flash' the SWIFT rotor is comprised of injection moulded nano-fibre reinforced polymer, with a matt black surface. Matt is specifically chosen to avoid highlights or bright reflections from rotor surfaces during rotation, in either natural or artificial light. In addition, the small diameter and proposed location of the turbine ensures that reflection and reflectivity are not considered to present any issues in this instance.

Noise

The issue of Noise and Electromagnetic Interference are addressed in the attached Technical and Planning Pack but essentially, the turbine is designed to operate without creating any nuisance in terms of noise or electromagnetic interference, even in instances where other properties are nearby. In view of the remote siting of the proposed turbine, it is clear that no noise nuisance will be created by the proposal.

Telecommunication Interference

The issue of Noise and Electromagnetic Interference are addressed in the attached Technical and Planning Pack but essentially, the turbine is designed to operate almost silently, without creating any nuisance in terms of noise or electromagnetic interference. Furthermore the turbine id located some 300 metres from the nearest property or the A523 will ensure that no nuisance by virtue of noise will result from the proposal.

Bird Strike

With regard to the impact of birds at the proposed site, studies[1] carried out in the UK (at existing, large scale commercial wind farms) show hit rates of less than 1 per turbine per year. When scaled down to a small domestic turbine the rate drops to less than one. In context, this can be compared to the 10 million birds killed by cars every year.

[1]RSPB (2004): Information leaflet on Wind Farms and Birds. The RSPB stated, "In the UK, we have not so far witnessed any major adverse effects on birds associated with wind farms". Wind farms are always subject to an Environmental Impact Assessment and BWEA members follow the industry's Best Practice Guidelines and work closely with organisations such as English Nature and the RSPB to ensure that wind farm design and layout does not interfere with sensitive species or wildlife designated sites. Moreover, a report published in the journal Nature (Extinction risk from climate change, Nature 427, 145 – 148) confirmed that the greatest threat to bird populations in the UK is climate change.

Access for installation purposes will be obtained via the existing 130 metre driveway from the A523. Installation is expected to take no longer than two days, including connection to the electricity system of The Oaks.

Conclusion

Staffordshire Moorlands District Council is asked to support this application for the following reasons:

- There will be no adverse impact on the environment in terms of noise and wild life.
- There will be no adverse visual impact due to the size and colour of the turbine.
- The turbine will significantly abate the energy requirement of the property.
- The turbine will contribute towards the reduction of the property's carbon emissions.
- Installation of a small wind turbine facilitates the government's commitment to the reduction of carbon emissions and fossil fuels by sourcing 15% of electricity from renewable energy by 2015.