Planning Supporting Statement

Proposal to supply and install one small scale Evoco 10kw wind turbine

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Summary

It is proposed to install one small wind turbine on land adjacent to Land at Drake Hill Farm, Hey Slack Lane, Cumberworth.

The small scale 10kw wind turbine is designed for grid-connected electricity generation and will be mounted on a 15m mast, comparable in height to various telegraph and power transmission poles in the surrounding area. The turbine has maximum rotor radius of 4.8 metres and a rated output of 10kw. The turbine is to be connected to the national grid to enable and surplus energy generated to be fed onto the grid.

The Evoco 10kw turbine is expected to generate in excess of 35,000kWh - of electricity each year at an average wind speed of 7m/s, equivalent to a saving of approximately 65 tonnes of carbon dioxide. This installed capacity will also help to contribute towards the regional and national targets for renewable energy generation for 2020. The turbine has been specifically designed for low noise operation and minimal visual impact, and has exceptional performance within its class. The turbine has a survival wind speed of 50m/s. The turbine is constructed of high tech composite materials. The tower is finished fully in galvanised steel.

The proposed location of the wind turbine is shown in the following documents.
The proposed location of the turbine is approximately 160m from the nearest property not owned by the applicant.

Wind Resource

The proposed site has been evaluated thoroughly and in line with the national wind speed database for the UK (NOABL) gives an annual mean minimum wind speed of approximately *7.2m/s* for Grid Ref SE184070

Environmental Impact Assessment

Background and Policy Context

Wind energy is an abundant natural resource. It is non-polluting, clean and sustainable. The UK has one of Europe's windiest climates and therefore wind energy is expected to be an important element in achieving the UK government's commitment to reduce CO^2 emissions to 12.5% below 1990 levels by 2010. More specifically it is Government policy to achieve 10% of the nation's electrical requirements from renewable sources by 2010.

Planning Policy Statement 22, published in 2004 replaces PPG22 - Renewable Energy the statement and supporting notes cover all aspects of renewable energy including considerations for the siting of wind turbines and encourages favourable views towards small scale renewable power sources.

Significantly Paragraph 18:

"Small scale renewable energy development

Local planning authorities and developers should consider the opportunity for incorporating renewable energy projects in all new developments. Small-scale renewable energy schemes utilising technologies such as solar panels, biomass heating, small-scale wind turbines, photovoltaic cells, combined heat and power schemes can be incorporated both into new developments and some existing buildings. Local planning authorities should specifically encourage such schemes through positively expressed policies in local development documents."

Paragraph 20 states:

"Of all renewable technologies, wind turbines are likely to have the greatest visual and landscape effects. However, in assessing planning applications, local authorities should recognise that the impact of turbines on the landscape will vary according to the size and number of turbines and the type of landscape involved and that these impacts may be temporary if conditions are attached to planning permissions, which require the future decommissioning of turbines."

Environmental Impact

PPS22 Renewable Energy (August 2004) and/or PPG22 (Feb 1993) - Annex on Wind Energy, recommend the consideration of the following factors in the assessment of the planning implications of proposals for wind turbine developments:

Sitting and the Landscape

PPS22 and PPG22. It has been normal practice to site utility scale wind turbines on elevated and exposed ground in order to achieve the highest possible energy capture and optimise the economics of the project. This has led to considerable opposition to wind power projects wherever they have been proposed.

It is important to appreciate that the Evoco turbine is of a completely different scale to the now familiar utility scale turbines which may have tower heights of 100m and rotor diameters of 80m or more and in particular the large masts which are positioned West of the applicants property.

By comparison the Evoco turbine, with a tower height of 15m (max) and rotor radius of just 4.75m (max), is nearer in scale to a typical telegraph pole or power transmission pole, a familiar aspect of our rural landscape.

However it is accepted that the main difference between such installations and the Evoco turbine is that the turbine involves moving parts. The Evoco turbine has been specifically designed to have low visual impact, with slender blades and minimal visual bulk at tower height.

Standard and Certification

There is currently no compulsory standard for wind turbine design, however the Evoco 10 has been designed inline with and complies with the IEC 61400 -2 standard for small wind turbine design. The turbine has CE certification.

The turbine is designed to survive wind speeds of 50 metres per second, which is considerably in excess of those experienced in West Yorkshire. Indeed, if such winds were to be experienced inland in the UK there would be very widespread damage to buildings and power lines with considerable destruction. The maximum recorded wind speed during the notorious 1987 gales was 47.8 metres per second.

The turbine is currently being assessed under the rigorous MCS 006 Microgeneration Certification Scheme product accreditation scheme under which Evoco have already been approved as certified grant installer.

Safeguarding

PPG22, not applicable in this case as, due to its small scale, it is not felt appropriate that the installation should be safeguarded by the planning authorities against potentially conflicting future developments.

Precedent

PPG22 states that since the merits of particular cases vary widely, fears that granting of planning permission may be seen as setting a precedent is not sufficient reason for refusal.

Safety

PPG22 identifies little or no risk arising to the public and states that properly designed and maintained turbines are a safe technology.

Icing

PPG22. Icing up of the GRP composite blades is not seen as a risk in the proposed location.

Proximity to Power Lines

As there are many overhead power lines in the local area care has been taken to ensure the turbines are suitably sited, clear from the tower and lines with at least falling distances allowed for. Whilst the turbine is considerably lower than the overhead lines; following YEDL's guidelines we have avoided the lines by a minimum of 9m.

Proximity to Airports

PPS22 and PPG22. The nearest airport is Leeds Bradford airport 20 miles away. This scale of turbine will not have any impact on air traffic as it is lower than surrounding overhead electricity pylons.

Proximity to Railways

The nearest railway line will be in the Denby Dale vicinity at least 2 miles away from the property. PPG22 says it may be advisable for a turbine to be set back from roads and railways by a distance equal to at least the height of the turbine. Clearly in this case the turbine is at a far greater distance that this from the railway track and is set with ample falling distance from the road.

Shadow Flicker

PPG22. Shadow flicker is a rare event which sometimes can occur when the shadow of the turbine blades play on nearby buildings at certain times of day and days of the year. It most commonly would affect nearby buildings to the East or West of the turbine at dusk and dawn. The distance from the turbine to neighbouring properties mean this would not be an issue.

Scattering Signal

PPG22. This is a phenomenon that very occasionally may affect large turbines. It is not considered to be relevant to a turbine as small as the Evoco turbine.

Specialist Consultation

PPG22. This is not believed to be appropriate for a small turbine such as the Evoco in the

proposed location.

Noise Levels

It is generally accepted that if the wind turbine noise is less than 10dB(A) below background noise levels, this will not cause a nuisance to neighbours. On a typical site in the countryside, it is expected that this condition can be met at distances greater that about 40-50m from the wind turbine base. Therefore as a general rule where possible, the nearest residents to the wind turbine should be 50m or more away.

The noises from the wind turbine are however gentle and it would be quite reasonable to locate the wind turbines less that 50m from your home.

The Evoco 10 is anticipated to produce less than 45db under normal operation at 6m/s at a distance of 50m. The turbine uses a permanent magnet generator, specifically designed for low noise unlike large scale turbines that use gearboxes, usually the source of noise.

The table below give a guide to average noise levels as a comparison:

Examples of typical noise levels

Source/Activity Indicative noise level	[dB(A)]
Threshold of hearing	0
Rural night-time background	20-40
Quiet bedroom	35
Busy road at 5km	35-45
Car at 65km/h at 100m	55
Conversation	60
City Traffic at 5m	75-85
Pneumatic drill at 7m	95
Jet aircraft at 250m	105

Source of data - http://www.sleafordrep.co.uk/info/ESVol2/APPENDIX%2010.1.pdf
There is much opposition to large wind turbines and often this focuses on noise issues, not all of which is entirely justified and most of which does not apply to small wind turbines. One specific issue which is often raised is that of so called 'low frequency noise'.

This is a factsheet from the BWEA on this issue:

http://www.bwea.com/pdf/briefs/lfn summary.pdf

In summary however there is absolutely no question of a low frequency noise from the Evoco wind turbine.

I. This is an issue which only affected some early large wind turbines in the USA back in to early 80's.

2. No small wind turbine would ever produce a low frequency noise due to their small size.

Ecology

It is not believed that the proposed site is in any way a protected habitat or area of outstanding natural beauty. PPG 22 suggests that the risk of collision between birds and the moving blades is minimal and this is borne out by Evoco's experience. Evoco has no knowledge of local bat habitation in the area.

Listed buildings and conservation areas

There are not believed to be any known archaeological remains at the proposed location. In any case, the foundations required for each Evoco turbine involve minimal disturbance of the ground beneath the tower and each anchoring point and are removable in the event of future decommissioning of the turbines.

The proposed location is not in the vicinity of any known listed buildings or conservation areas.

Construction Disturbance

The amount of additional traffic and need for construction machinery to erect the Evoco turbine is negligible. No road closures or hindrances to access will be necessary.

Conditions

Due to the minimal foundations required for the Evoco turbine, restoration of the site following possible de-commissioning is particularly simple.

No ancillary structures or buildings are required to house electrical equipment or controllers, which will be located in the applicants building.

If planning officers would like to visit an installed turbine locally to take readings on sound levels or to gain a good firsthand appreciation of the scale of the turbine, Evoco would be happy to arrange this.