Universal Green Energy

Design Access Statement

PLANNING APPLICATION FOR A EVOCO 10Kw WIND TURBINE WITH A 15m MAST BY

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ON BEHALF OF

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Summary

The small scale Evoco 10kW wind turbines are designed for grid-connected electricity generation and will be mounted on a 15m mast. The turbines have maximum rotor radius of 4.75 metres. The turbines are to be connected to the national grid to enable and surplus energy generated to be fed onto the grid.

The turbine is expected to generate in excess of 30,000kWh of electricity each year at an average wind speed of 6m/s, equivalent to a saving of approximately 16 tonnes of carbon dioxide per year. 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 170m from the nearest property not owned by the applicant.

Ordnance Survey maps will accompany the application, outlining the extent of the site in blue, the proposed location of the wind turbine in red, and the proposed route to the transformer in green. An additional site map showing the full extent of the site has been included.

Wind Resource

The proposed site has been evaluated thoroughly and in line with the national wind speed database for the UK (NOABL), and the wind speed quoted above has been researched for the site location 53° 20’ 31” N, 1° 57’ 31” W, recalculated to the turbines’ installed elevation. This average wind reading for the proposed site is well above average and is comfortably within recommended guidelines for a wind turbine siting.

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:

Siting 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.

UDP Policies

PPS1 Delivering Sustainable Development

PPS1 sets out the Government's overarching planning policies on the delivery of sustainable development through the planning system. This PPS replaces Planning Policy Guidance Note 1, General Policies and Principles, published in February 1997. The document states that planning should facilitate and promote sustainable and inclusive patterns of urban and rural development by:

- making suitable land available for development in line with economic, social and environmental objectives to improve people's quality of life;
- contributing to sustainable economic development;
- protecting and enhancing the natural and historic environment, the quality and character of the countryside, and existing communities;
- ensuring high quality development through good and inclusive design, and the efficient use of resources; and,
- ensuring that development supports existing communities and contributes to the creation of safe, sustainable, liveable and mixed communities with good access to jobs and key services for all members of the community.

PPS22 Renewable Energy

This PPS aims to encourage further development of renewable energy resources. It states that all Regional Spatial strategies and local development documents should contain policies designed to promote and encourage the development of renewable energy resources. Planning authorities should set out the criteria that will be applied in assessing applications for planning permission for renewable energy projects.

The Regional Spatial Strategy should include the target for renewable energy capacity in the region, where appropriate this can be disaggregated into subregional targets.

Local planning authorities may include policies in local development documents which require a percentage of the energy to be used in new residential, commercial or industrial developments to come from on-site renewable energy developments.

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

Whilst the turbine is considerably lower than overhead power lines, following guidelines provided by YEDL, turbines are always sited at least 9m from power lines.

Proximity to Airports

PPS22 and PPG22. The nearest airport is Manchester International airport 21km 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 Buxworth (Jane Lane) vicinity at least 0.44km 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

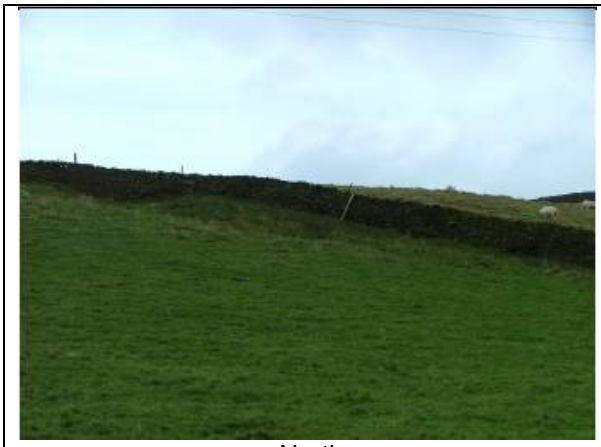
PPG22. Shadow flicker is a rare event which sometimes can occur when the shadow of the turbine blades play on nearby buildings at certain times of day and days of the year. It most commonly would affect nearby buildings to the East or West of the turbine at dusk and dawn. The distance from the turbine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

Scattering Signal

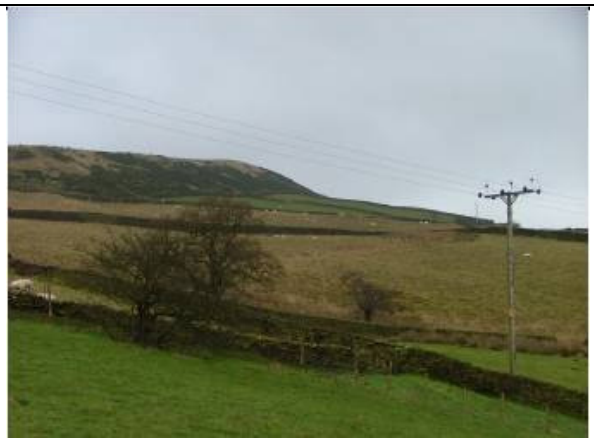
PPG22. This phenomenon very occasionally may affect large turbines. It is not considered relevant to a turbine as small as the Evoco turbine.

Images from the site

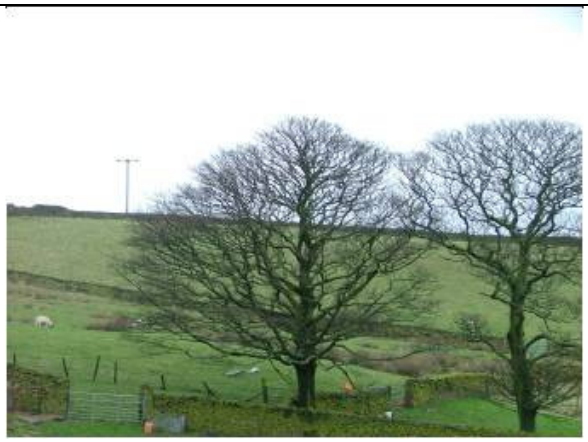
Below is a panoramic montage showing the area surrounding the proposed site.



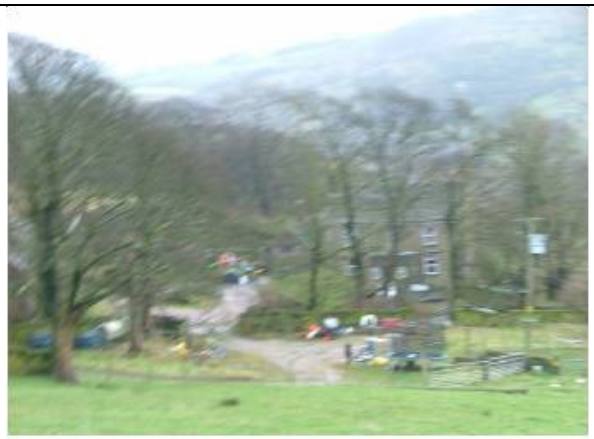
North



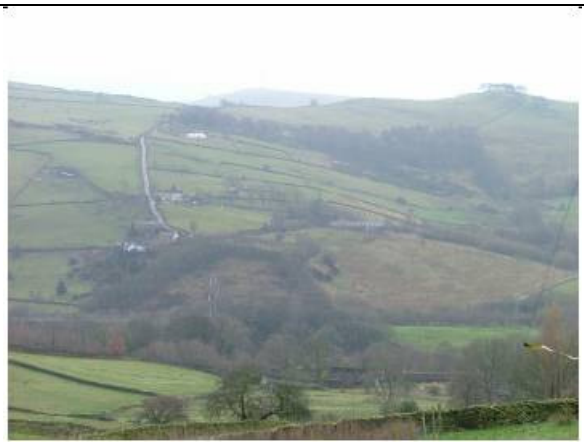
North East



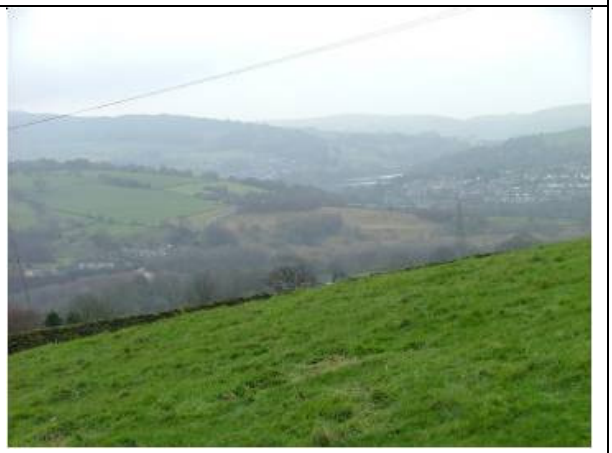
East



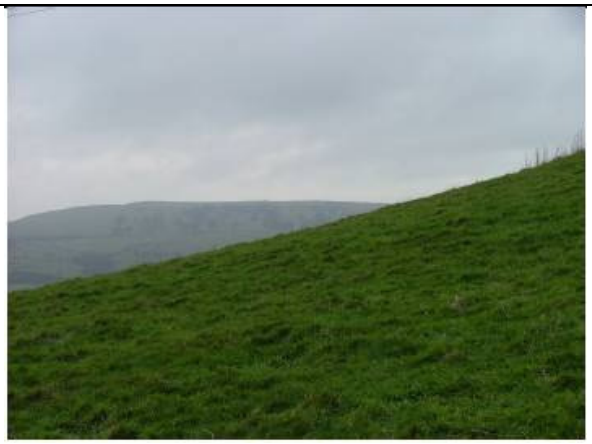
South East



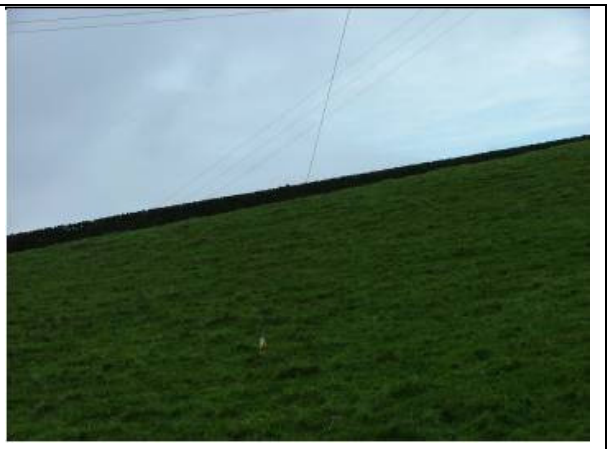
South



South West



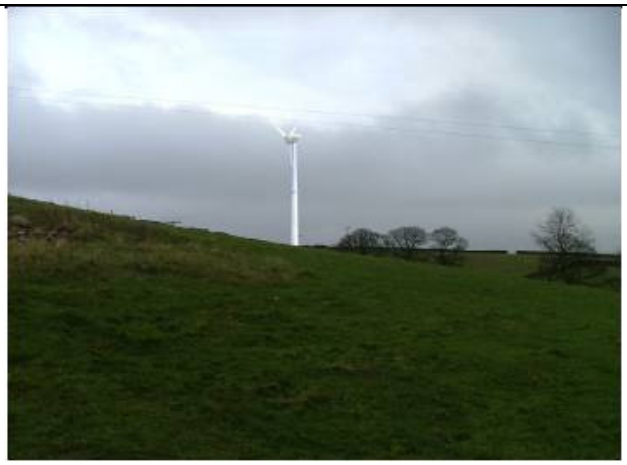
West



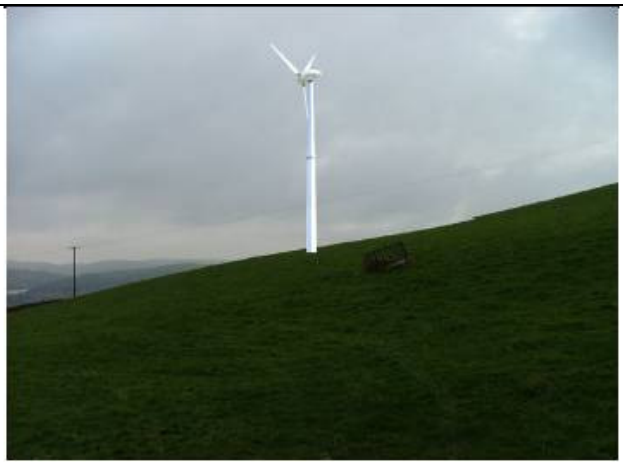
North West

Specialist Consultation

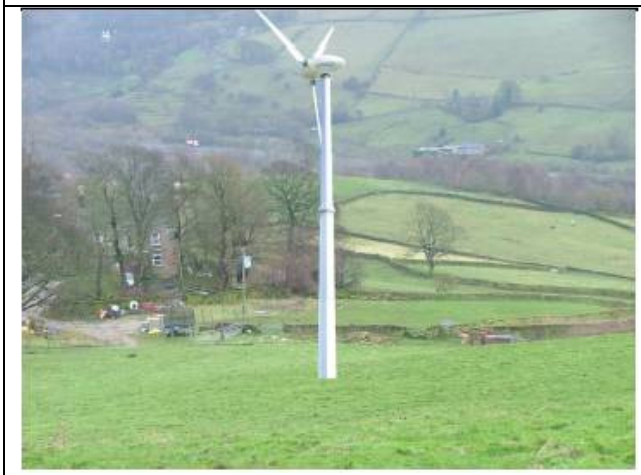
Below is a photomontage of the turbine at the proposed location on the site.



View: North



View: East



View: South

View: West

Specialist Consultation

PPG22. This is not believed to be appropriate for a small turbine such at 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 100m from the wind turbine base. Therefore as a rule where possible, if there is an unobstructed line of site to the turbine, the nearest residents to the wind turbine should be 100m or more away.

The noises from the wind turbine are however, gentle and it would be quite reasonable to locate the wind turbines less than 100m from your home.

The Evoco 10 is anticipated to produce less than 45db under normal operation at a distance of 100m.

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	30-40
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

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 summarv.pdf

Please see the noise report submitted as an accompanying document which details the noise levels emitted by the turbine.

In summary, the noise generated by small wind turbines is normally masked by background noise when located at least 100m from other permanently occupied dwellings.

Ecology

It is not believed that the proposed site is in any way a protected habitat or area of outstanding natural beauty, however, it does lie within green belt boundaries.

PPG 22 suggests that the risk of collision between birds and the moving blades is minimal.

The RSPB state *"…the RSPB favours a broad mix of renewables, including solar, wind, and marine power, wherever they are used in ways that minimise unnecessary damage to wildlife and the natural environment. We particularly support solutions that enable individuals and communities to generate their own power close their homes and businesses.*"

The Natural England Technical Information Note TIN051 – Bats and Onshore Wind Turbines states "*The Eurobats guidance proposes that the buffer surrounding woodland areas should be 200 m, while this document suggests a buffer zone of 50 m*."

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 turbine is negligible. No road closures or hindrances to access will be necessary.

Conditions

Due to the minimal foundations required for the 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, we would be happy to arrange this.

Conclusion

There will be minimum impact on the environment in terms of noise and wildlife, and minimum visual impact from public roads.

The turbine will reduce the properties carbon emissions by approximately 100%.

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.

Universal Green Energy