DESIGN AND ACESS STATEMENT

PROPOSED INSTALLATION OF 1 N0 SMALL SCALE EVOCO 10KW WIND TURBINE ON A 15M MAST

CARRIED OUT BY:

INVESTMENT RENEWABLES LTD
30 BANK STREET
MIRFIELD
WEST YORKSHIRE
WF149QF

T:01924 501 520
M:07788 436 893

ON BEHALF OF:

MR MICHAEL & KATHRYN LONSDALE

HEY SLACK FARM
HEY SLACK LANE
CUMBERWORTH
HUDDERSFIELD
HD88YD

DATE CREATED 25/01/11

Investment Renewables Ltd

INTRODUCTION

This statement is submitted in support of a full planning application for the installation of 1 No small scale 15m 10kw wind turbine on land adjacent to:

HEY SLACK FARM, HEY SLACK LANE, CUMBERWORTH, HUDDS, HD88YD

This statement explains the background to the proposed development, describes the scheme and, in the context of relevant planning policy, sets out the case for the proposal.

SUMMARY

The Evoco 10 Kw small scale wind turbine is designed for grid – connected electricity generation and is to be mounted on 15 m mast. The towers are hot dipped galvanised steel and finished in grey with the blades and nacelle constructed of composite material finished in matt white. The turbine has a maximum rotor radius of 4.75 metres and will be connected to the national grid so the surplus electricity that is generated can be fed back into the system.

The Evoco turbine is designed for low noise operation and minimal visual impact and are a leader within their class. They are a class II turbine ideal for typical UK wind conditions and operate optimally at average annual wind speeds of 5m/s – 8 m/s. They have a survival wind speed of 50 m/s.

The applicant is proposing the development to support our national and regional targets to lower carbon emissions by 2020 and to reduce their requirements to draw power from oil and the national grid. With a high annual oil usage of approx 2,200 litres the applicant intends to increase electrical usage and reduce oil usage where possible by installing oscillating heaters and by using the emersion.

The turbine is expected to generate a high yield of energy of around 41,890 Kwh/Annum calculated from an estimated 7.2 m/s average annual wind speed. This generation is expected to save approximately 18 Tonnes of CO_2/Annum, 360 Tonnes over the 20 year life expectancy of the turbine.

The turbine has been sited sympathetically away from neighbouring parties with a minimum separation distance of over 150m from the nearest turbine. We have taken into consideration the impact of the turbine visually and ensured that the turbine was positioned in a lower point within the field to reduce its prominence within the green belt.

Attached with this application and this 'Design And Access Statement' are various supporting documents including OS scaled maps showing the precise location of the turbine and the scale of a typical turbine, as well as a 'Green Belt Impact Assessment' showing justification for their installation in accordance with PPG2 & PPS22 and EN1 & ES12 of the Barnsley UDP.

WIND RESOURCE

The proposed site has been evaluated in line with the NOABL wind speed database for the UK and the average annual wind speed established for the site Eastings 418394, Northings 406400 has been recalculated to the turbines proposed elevation of 15m (7.2 m/s). The local wind speed is above the UK average and offers an exceptional site within the guidelines of good wind turbine siting.

SITE BACKGROUND

The applicant uses approximately 4,548 kwh of electricity on site per Annum. The land is currently used only for silage offering the applicant with a great opportunity to make use of the high wind speed and spare land.

The applicant is located in an area of significantly high wind allowing for an exceptionally high average wind speed. This would allow the customer to generate a high yield of electricity that can be sold back to the grid as clean electricity with the energy supplier redistributing to those without the means to generate their own renewable electricity.

The customer is aware of our obligations to reduce our use of fossil fuels and wishes to support the UK's regional and national targets for renewable energy generation for 2020. It is believed that the site offers an excellent location whilst bearing as little impact as possible on the surrounding communities. This is due to the small number of inhabitants in and around the Cumberworth area as well as the carefully chosen location at the foot of the customers rising land.

The customer has carefully considered other ways to reduce their high oil usage such as the use of oscillating heaters and the use of the emersion to draw more electricity from the turbine thus reducing the requirement for oil.

Continuous increases in energy prices each year and their desire to promote themselves as green and energy efficient, really demonstrates an excellent reason to install this renewable technology.

After assessing various options the decision has been made to install 1 No small scale wind turbine to take full advantage of this prime location. The primary reasons for this over other renewable technologies are the abundant,

good quality wind resource in and around the Cumberworth area and the more than sufficient spare land. The site in question has uninterrupted open land in the West and South West. This is the Prevailing wind direction, where approx 80% of the UK's wind comes from, which is ideal for maximising energy generation.

JUSTIFICATION FOR THE DEVELOPMENT

The United Kingdom has a target to reduce its greenhouse gas emissions by 12.5% below base year levels by 2008-12 and a further domestic goal to reduce carbon dioxide emissions by 20% below 1990 levels by 2020.

The Renewables Obligation came into force in April 2002, requiring all electricity suppliers to source 10% of their supply from renewable technologies by 2010.

The current Feed-in tariff effective April 2010 is a government initiative similar to those found in Europe designed to encourage the installation of microgeneration technologies by the domestic and SME sectors.

Cumberworth benefits from an excellent wind resource with a 7.2 m/s 10m agl wind regime on site. The Evoco 10kw turbine is expected to generate approximately 41,890 kWh of electricity each year. This is equivalent to a saving of approximately 18 Tonnes of carbon dioxide/Annum & 360 Tonnes over 20 years.

The turbine is expected to provide a number of local households with green electricity through exported electricity onto the grid. It is expected that the excess electricity produced on site will be sufficient to run between 8-10 homes per annum, aiding Barnsley and benefiting the larger community as a whole.

SITING

The turbine is to be sited to the South of the land with approximately 150m from the main supply. The location was chosen to take best advantage of the topography of the site and to best utilise the prevailing winds typically from the South West, at the same time minimising noise impact on surrounding neighbours and keeping visual impact to a minimum.

It was decided to install 1 small scale wind turbine, to maximise on the high winds available at the location but not causing too greater impact to visual amenity. The proposed turbines are more similar in size to a telegraph pole or small mobile phone masts commonly seen all over West Yorkshires countryside. Other turbines in the local area were considered and the location chosen to avoid cumulative impact in the Cumberworth area.

SITE PHOTOS

ARIAL OF SITE LOCATION



PROPOSED TURBINE LOCATIONS



360 VIEWS FROM LOCATION

	
SOUTH WEST	NORTH WEST
	
SOUTH EAST	NORTH EAST

IMPOSED TURBINE IMAGES



NORTH WEST (FROM BIRDS NEST LANE) – VIEW POINT 1



NORTH 1 (WITH DRAKE HILL FARM TURBINE IMPOSED IN BACKGROUND) – VIEW POINT 2



NORTH 2 (ONLY TURBINE PROPOSED AT HEY SLACK FARM) – VIEW POINT 2



SOUTH 1 (WITH DRAKE HILL FARM TURBINE IMPOSED IN FOREGROUND) – VIEW POINT 3

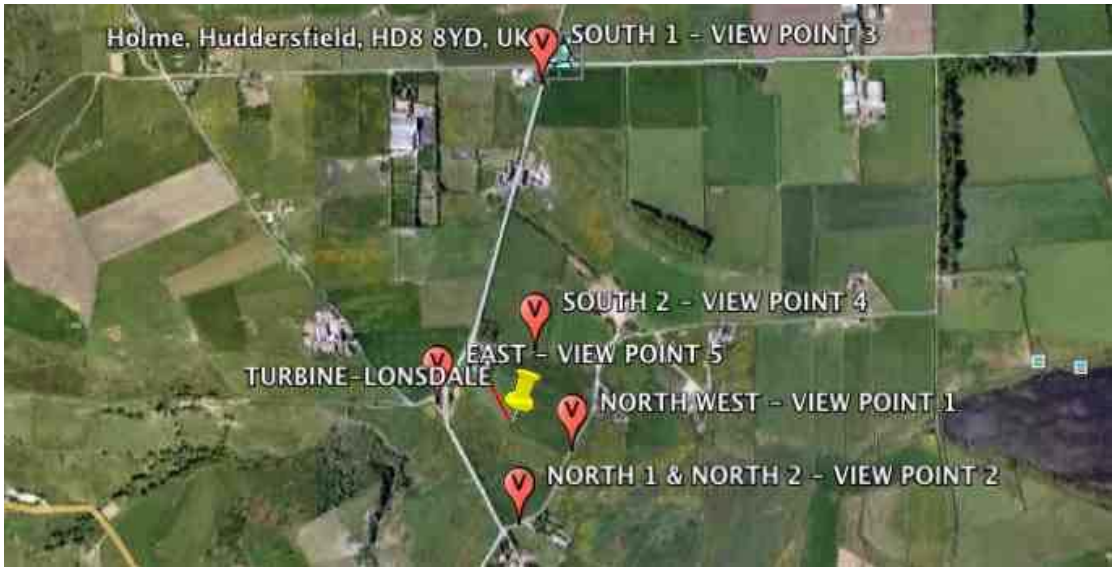


SOUTH 2 (FROM TRACK TO REAR OF HEY SLACK FARM) – VIEW POINT 4



EAST – VIEW POINT 5

PHOTO VIEW POINTS



DESIGN

The Evoco 10kw turbine has a rotor radius of 4.75 metres (max) and is mounted on a freestanding 15 metres (max) tower, comparable to the Proven turbine to the West at the cross roads of Haddingley Lane & Windmill Lane. The turbine nacelle and blades are manufactured from high tech materials, coated and painted matt white with the tower being grey in colour and fully hot dipped galvanised steel.

The colours were chosen, as they are believed to blend well with the skyline in most situations offering as little visual impact as possible. The white and grey of the Evoco will blend into the background far more sympathetically than the Provens that are black and grey.

ACCESS

There is no public access required to the turbine at Hey Slack Farm. Access for maintenance is annual and can be gained along existing tracks and vehicles can be parked inside the field gate, away from the road. There will be no disruption to the pedestrian access or vehicular access to the site during installation and maintenance.

ENVIRONMENTAL IMPACT ASSESSMENT

BACKGROUND AND POLICY CONTEXT

Government policy on renewable energy is contained within the Energy White Paper 'Our energy future - creating a low carbon economy' (2003).

The Regional Spatial Strategy for Yorkshire and the Humber to 2016 (2004) sets out the regional targets for renewable energy, acknowledging that polices and proposals should be included within development plans to help achieve the regional targets. Policy R 12 of the spatial strategy sets out the renewable energy targets for Yorkshire and Humberside.

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.

It states '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'.

SINIFICANTLY 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."

BARNSLEY UDP POLICIES

POLICY ES12: RELATES TO DEVELOPMENT ASSOCIATED WITH WIND ENERGY GENERATION AND STATES A RANGE OF CRITERIA THAT PROPOSALS FOR WIND ENERGY WILL BE ASSESSED AGAINST. THE CRITERIA COVER THE FOLLOWING ISSUES; CUMULATIVE IMPACT, RESIDENTIAL AMENITY, TRANSPORT AND ACCESS, ECOLOGY & CULTURAL HERITAGE, AGRICULTURAL IMPACTS, ELECTROMAGNETIC EFFECTS, SUPPLY OF ELECTRICITY AND SHADOW FLICKER.

POLICY E12A: REQUIRES APPROPRIATE TECHNOLOGY AND DESIGN OF WIND ENERGY PROPOSALS INCLUDING APPROPRIATE COLOURATION OF TURBINES.

POLICY E12B: PLACES A REQUIREMENT ON DEVELOPERS TO RESTORE SITES USED FOR WIND ENERGY DEVELOPMENTS WITHIN ONE YEAR OF THE CESSATION OF ACTIVE USE TO THEIR ORIGINAL CONDITION.

ALSO OF IMPORTANCE;

GS7: SEEKS TO MAINTAIN THE OPENNESS OF THE GREEN BELT AND NOT CONFLICT WITH THE PURPOSES OF INCLUDING LAND WITHIN THE GREEN BELT.

GS8: ENSURES NEW BUILDINGS IN THE GREEN BELT ARE ONLY PERMITTED IN VERY SPECIAL CIRCUMSTANCES.

GS9: AIMS TO PROTECT THE VISUAL AMENITY OF THE GREEN BELT.

GS15: SEEKS TO SAFEGUARD IMPORTANT HABITATS AND SPECIES FROM DISTURBANCE, POLLUTION OR OTHER DAMAGE.

GS16: SEEKS TO AVOID ADVERSE AFFECTS OF DEVELOPMENT ON *Inter Alia* HABITATS OR SPECIES PROTECTED BY LAW.

GS18: PREVENTS DEVELOPMENT THAT WOULD AFFECT *Inter Alia* NATURAL HERITAGE SITES UNLESS THERE IS A CLEAR NEED FOR THE DEVELOPMENT.

BE2: SEEKS TO AVOID ADVERSE EFFECTS ON LISTED BUILDINGS.

BE3: ADOPTS A PRESUMPTION IN FAVOUR OF PHYSICAL PRESERVATION OF ARCHAEOLOGICAL REMAINS.

BE6: SEEKS TO ACHIEVE GOOD DESIGN STANDARDS FOR ALL TYPES OF DEVELOPMENT.

T2: SEEKS TO ENSURE DEVELOPMENT DOES NOT HAVE ADVERSE EFFECTS ON HIGHWAY SAFETY.

WR13: ENSURES DESIGNATED SITES ARE PROTECTED IN ACCORDANCE WITH POLICY GS15.

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 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, similar to those on the nearby wind farm to the Southeast.

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. Care has been taken to select appropriate materials that are sympathetic to as many situations as possible.

The turbine is to be situated at the lower point on the customers land; this should not affect the capture of wind but does ensure the turbine is as far from neighbours as possible. The visual impact can be seen in 'SITE PHOTOS' and the chosen location is believed to mitigate the visual impact.

STANDARDS AND CERTIFICATION

There is currently no compulsory standard for wind turbine design, however the Evoco 10 has been designed in line 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 m/s, which is considerably in excess of those experienced in South 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 has been assessed under the rigorous of MCS 006 Microgeneration Certification Scheme product accreditation scheme under which Evoco have already been approved as certified grant installers. The product is now fully MCS accredited ensuring the turbine adheres to all required quality & efficiency specification and guaranteeing the customer will receive FITs Payments for the duration of twenty years.

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. Each application must be dealt with in it's own right as the variables and impacts of each potential site can vary dramatically.

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

There are no large overhead power cables in the vicinity of the proposed site but care has been taken to ensure the turbines are suitably sited, clear from phone 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 fallin distance plus 9m.

PROXIMITY TO AIRPORTS

PPS22 and PPG22. The nearest airport is Leeds Bradford airport 37 km away. This scale of turbine will not have any impact on air traffic, as it is lower than surrounding buildings. The topography of the land demonstrates higher points in between the airport and the proposed location therefore will not affect the airport traffic.

There are numerous installations of a similar size in close proximity to this proposal and it is deemed that there will be no adverse affects on air traffic signalling or compromise on safety.

PROXIMITY TO RAILWAYS

The nearest railway line will be in Shepley, 6.5 km 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 than 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 as a distance of 10 x rotor diameter away is seen as sufficient to eradicate any chance of this. On site we can easily achieve a distance of 13 x rotor diameter.

SCATERING 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 5dB(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 than about 150m from the wind turbine base. Therefore as a general rule where possible, the nearest residents to the wind turbine should be 150m 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 150m from your home in some circumstances.

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 gives 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 that 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

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.

Please see the accompanying noise Data, which details the noise levels emitted by the turbines.

In summary, the noise levels generated by small wind turbines is normally masked by background noise when located at least 150m 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.

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 minimi se unnecessary damage to wildlife and the natural environment. We particu larly support solutions that enable individuals and communities to generate their own power close to their homes and businesses."*

The land at Hey Slack Farm is used only to produce silage, offering relatively poor habitation for wildlife.

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*."

In our experience a buffer of 50m is more than acceptable. This distance of 50m has been adhered to at Hey Slack Farm with the nearest tree line located 150m away from the turbine to the North.

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 with a maximum excavation depth of 1.6m. Each anchoring point is easily removable in the event of future decommissioning of the turbines.

The proposed location is not in the vicinity of any known listed buildings. And there are no Conservation areas of significance around the proposed turbine locations.

CONSTRUCTION DISTURBANCE

The amount of additional traffic and need for construction machinery to erect the turbines is negligible. No road closures are required and disturbance to the footpath will be minimal during the ground works period and construction.

CONDITIONS

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

All of the electrical components and controls will be housed in the customers' property.

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, Investment Renewables would be happy to arrange this.

CONCLUSION

This statement has been produced to support the planning application for the installation of 2 No Evoco 10kw wind turbines on 15m masts at:

HEY SLACK FARM, HEY SLACK LANE, CUMBERWORTH, HUDDERSFIELD, HD88YD.

The turbine propose the generation of electricity for use on site with the excess sold back to the grid for resale as clean energy. The development is in line with central and regional government guidance and adheres to the policies of Barnsley Metropolitan Borough Council.

The impact of the proposed development has been considered carefully and Investment Renewables believe there is enough justifiable evidence to allow the installation of the 1 small scale wind turbine.