Wind Services Cost Sheet

Wind Site-Survey/Feasibility Study

Enviko will visit your proposed site and discuss your project aims with you whilst undertaking the site survey; producing a detailed report on the likely wind resource, site access, grid connection issues along with a detailed option appraisal for different turbines.

Cost: £355.00*

(*please note this cost is deductible from any future installation work.)

Following initial discussion regarding your project aims, site and potential constraints a wind-energy engineer from Enviko will visit your site and assess the suitability of your proposed location for a small wind turbine; a detailed report will be produced containing:

1. An assessment of the potential wind resource, using the NOABL database and MET office data, incorporating adjustment with respect to local wind resource conditions where appropriate. This will result in the most accurate estimation possible of the expected long term annual average wind speeds on site without requiring a wind monitoring tower to be installed.

2. Enviko will undertake a site suitability assessment that will review any limitations to the successful physical deployment of a wind turbine such as site access, ground conditions, electrical connection, cable routes etc.

3. Enviko will determine the optimum location for deployment of a wind turbine with respect to the wind resource, physical limitations and potential issues relating to planning such as noise, shadow flicker, safety and the least impact on the surrounding properties and views.

4. An energy generation and resultant revenue generation assessment with reference to your site specific wind resource will be undertaken for up to 5 wind turbines that are available in the marketplace within the UK will be made, including how much energy you

5. would be expected to use within the property and how much would be likely to be exported to the grid.

6. Wind turbines can be connected to either a single- or three-phase electricity supply. This will be determined by the type of electricity supply that you have to you metered point in your home/business. Single-phase will limit the choice of turbine to between 1-10 kW, whilst a three-phase supply should enable electricity export at any capacity greater than 10 kW. Enviko will contact the Distribution Network Operator (DNO) on your behalf and make an informal application as to the likely costs of any connection or grid upgrade fees required to connect a single- or three- phase machine to the distribution system.

7. Subsequently Enviko will provide details of the required ground works for the installation of the turbine of choice which will accurately identify the total project costs for your development.

8. Enviko will present the findings, results and data in report format such that you can digest the information and make an informed decision upon the technical and economic viability for the wind turbine of your choice. This will culminate in a cost-benefit analysis of the differential capital costs versus the revenue generated from electricity savings and export each year. The report may be used as supplementary guidance and evidence for any planning applications.

Wind Monitoring <20kW

For the smallest installations, the cost of wind monitoring equipment can exceed the cost of the installation itself so other methods are necessary. The simplest of these is observation over a period of time and if the proposed user is living on the site they will have a good idea of average wind conditions.

Cost: £850.00

Since a doubling in the wind speeds will provide eight times the electricity generation, carrying out some simple monitoring on-site will enable the viability of the wind to be more accurately assessed, particularly on a month-by-month basis and with a shorter "averaging" period. The whole of the UK has a wind speed "map" which employs regional data analysis and subsequent computer modelling which can provide an estimate of the likely wind resource that you could find at your location. Enviko suggest that wind speeds in excess of 5 m/s are suitable for a financially viable wind turbine installation. By deployment of sensors recording the wind speed (anemometer) for a 3-month period Enviko are able to monitor the on-site wind speeds and cross correlate them with long-term data sets on an annualised basis to have far greater confidence that the initial outlay in wind turbine equipment will deliver short-term payback periods. Simple connection of the monitoring equipment on a 9-11m mast via PC allows a very useful site history of weather patterns to be created and wind speed data to be extracted at low cost in a quick, simple manner.

Enviko advise that, in particular for <20kW connected to the grid, where the capital investment is greater, accurate wind monitoring is an essential first step in determining how much power can be produced, for how much of the time, and how quickly the investment can be paid back.

Note some prices may vary depending on individual circumstances and are ex VAT (normally 5% for domestic customers)

Wind Monitoring >20kW

Enviko will install wind measurement equipment and monitor the wind speeds for several months. The recorded data will be analysed such that a prediction of the on-site wind speeds can be made with results supplied in report format.

Cost: £2500.00

Selecting a wind turbine will depend not only on the physical site limitations and grid connection constraints (single *versus* three phase) but also upon the capacity of the wind turbine itself and the relevant wind resource that is required in order that it perform to its maximum potential. All wind turbines have a different power production curve that is variable across a range of wind speeds. Enviko suggest that, fundamentally, if you are borrowing money in any form (loan, guarantee, re-mortgage etc.) one should seek to ensure that they have confidence in the additional revenue generated by the wind turbine year-on-year, such that the additional revenue exceeds in surplus the cost of debt repayment. In this way one is able to have confidence in the long term prospects by way of electricity generation and subsequent revenue from electricity export to offset the debt repayment. Enviko's wind monitoring service is capable of giving in excess of 90% probability in the wind resource and hence electricity and subsequent export revenue generation confidence.

For larger installations (>20 kW) we would advise that a site survey is undertaken such that any turbulence issues are identified. In this capacity and scale there is no real economies of scale for installation of a wind monitoring mast such that it can determine the wind resource and subsequent electricity generation.

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Planning Application (< 20kW)

Enviko will complete and submit to your local planning authority a very detailed planning application including a photomontage illustrating the turbine in the proposed location and supporting technical details. Additional research and consultation with the local authority

Cost: £855.00*

It is up to each local authority to decide what information you may need to provide with your application. Should your proposed site be in a sensitive area, e.g. AONB or Green Belt, it is essential to prepare a more detailed and customised planning application than in normal circumstances. If you wish to install a wind turbine which will be attached to your house building regulations will normally apply. Size, weight and force exerted on fixed points would be considerable. If the wind turbine is not attached to your house, then only the electrical installation and connection will be captured by the requirements of the building regulations.

Using the information captured during our Site Survey, or if that has not occurred, then supplied by you, a member of Enviko will prepare a full planning application for a domestic small wind turbine and submit it to your local authority.

This will include:

1. A site plan, with your boundary and proposed turbine location marked.
2. A description of the site and the turbine location.
3. References to any applicable local development plan or renewable energy targets.
4. A photomontage of the proposed turbine and tower superimposed on a picture of the site.
5. Supporting technical information on the turbine.

price excludes planning submission fees.

Note some prices may vary depending on individual circumstances and are ex VAT (normally 5% for domestic customers)

Planning Application (> 20kW)

A major part of each project is the planning application stage which may often take the largest part of the project duration. The planning regime for installing wind turbines is complex and evolving. Dealing with the planning authorities is all part of the service we provide when you purchase a wind turbine from us. Enviko offer to carryout the full planning application process on behalf of our clients. Enviko can draft all supporting documentation required by the local authority as part of the submission and undertake all reviews necessary, as described by the items below.

It is up to each local authority to decide what information you may need to provide with your application. In general, however, wind energy installations require planning permission and local consultation with relevant stakeholders, such as neighbours and local community groups. Deciding factors include environmental considerations, access to the site, noise and visual effect. Overall, national planning policies support the development of small scale wind energy, as noted below.

Planning Policy Statement 22 (PPS22) sets out a clear national policy framework on renewable energy for planning authorities in England to ensure that the Government's renewable energy targets are met. Under PPS22 regional and Local Planning Authorities should recognise the full range of renewable energy sources, their differing characteristics, locational requirements and the potential for exploiting them subject to appropriate environmental safeguards. Small scale developments can also be permitted within areas such as National Parks, Areas of Outstanding Natural Beauty and Heritage Coasts provided that there is no serious environmental detriment to the area concerned. PPS22 introduces a new policy area for small systems by encouraging Local Planning Authorities to require that new developments should supply a percentage of their energy needs from onsite renewable energy sources.

A description of the general areas of investigation that will necessarily be required to be covered is provided below.

Landscape & visual effects

Wind Energy developments are temporary structures which can be removed and the land made good, should other clean energy technologies become commercially viable by the end of the

lifetime of the project. Wind energy developments are by their very nature visible structures and while this should not be the reason for refusal in itself, inevitable issues of landscape appearance and change will need to be considered.

In areas of national landscape designations, large scale projects can only be permitted if there are considered to be no significant adverse effects on the special nature of the designation, or where the developer can demonstrate mitigation measures that will overcome these significant adverse effects. They can otherwise only be granted permission where there is overriding national need and an absence of alternative locations outside such designations.

LPA's should be aware that such criteria are unlikely to be as restraining to small wind systems; given their small scale, the likelihood of such developments producing significant adverse visual effects is greatly reduced.

Effects on wildlife & nature conservation

Planning permission for wind energy projects should only be granted where the developer can demonstrate mitigation measures to overcome any significant adverse effects to wildlife and nature conservation, or where any significant effects are clearly outweighed by the environmental, social and economic benefits of development.

Heritage

Planning permission should be granted where the objectives of designation will not be compromised by development. Any significant adverse effects on the qualities for which an area/monument has been designated must be outweighed by environmental, social and economic benefits.

Cumulative Effects

The cumulative impact of wind generation projects should also be a consideration, though planning authorities should not set arbitrary limits on the numbers of turbines that will be acceptable in particular locations.

Noise

Whilst wind turbines are a new source of noise in the environment there are well-developed guidelines established to ensure that wind farm sites are designed to keep any resulting noise

signature within strict night and day limits. Such limits have been determined to lie below the World Health Organisation norms for the avoidance of any sleep disturbance.

Enviko can undertake the complete planning application on your behalf providing the standard documentation required as part of the submission pertinent to the local authority's planning requirements, as described above. The cost for this service is £1,200.00 – excl planning submission fees.

Should the local authority decide that additional supporting evidence and documentation be required in order to satisfy planning constraints Enviko can undertake full raft of supporting evidence, data and literature that could be required to be submitted as part of any planning application, namely:

- Electro-magnetic Interference
- Military Low Flying
- Television Reception
- Proximity to Roads and Railways
- Shadow Flicker
- Power Lines
- Siting in the Landscape
- Birds, Bats and Habitats
- Decommissioning
- Photomontages
- Energy modelling
- Local and Regional planning guidance
- Environmental statement

Enviko can draft all supporting documentation required by the local authority as part of the submission and undertake all reviews necessary, as described by the items above. The cost of each item reviewed is £350.00

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