FAQs - common myths about wind power

DO TURBINES AFFECT ANIMALS?

The turbines don't affect animals at all, we have turbines on livestock and poultry farms, in wildlife parks, nature reserves as well as in equestrian centres.

What happens when it is not windy?

If your turbine is battery connected, power is stored in the battery which you can use when there is no wind. If your turbine is grid connected and you sell excess power to the grid, when there is no wind, your power will come from the grid.

What happens if there are extremely high winds?

In extremely high winds the turbines keep operating due to their unique design. The original patented blade design means in high winds the blades cone out of the wind. This reduces the surface area exposed to the wind and stops the turbine from over producing; as the speed of the blades pick up, they twist and change angle. This twisting allows the blades to stall the speed enough to prevent an over speed of the turbine. Once the wind decreases, the blades open back out and return to an angle that doesn’t stall. This means that even in the strongest winds the turbines will continue to produce the maximum power without stopping.

Are the turbines noisy?

No, our turbines don't use a gearbox, the blades rotate at a relatively slow rpm and the blade aerodynamics all contribute to ensure the turbines are quiet in operation.

Do turbines kill birds?

Bird strikes do happen very rarely. We take care to site turbines away from bird feeders and nests as well as to identify migratory flight-paths where appropriate. The turbines rotate at a slow rpm and our black blades can be detected by birds from several hundred meters – allowing them to adjust their course appropriately. Vehicles, building windows and natural predators kill millions more birds a year than are killed or injured by wind turbines.

Are there any problems with low frequency noise?

There are no low frequency noise issues with our turbines.

Do the turbines stop in high winds?

No, the turbines keep operating in high winds due to their unique design. The original patented blade design means in high winds the blades cone out of the wind. This reduces the surface area exposed to the wind and stops the turbine from over producing; as the speed of the blades pick up, they twist

and change angle. This twisting allows the blades to stall the speed enough to prevent an over speed of the turbine. Once the wind decreases, the blades open back out and return to an angle that doesn't stall. This means that even in the strongest winds the turbines will continue to produce the maximum power without stopping.

Do turbines interfere with electrical equipment?

No, there is no interference whatsoever with electrical equipment.

Do turbines interfere with telecoms, radio or TV equipment?

No, turbines do not. We have a number of turbines at telecoms bases for a variety of leading telecoms companies including O2, Orange and T-mobile.

Do the turbines produce radiation?

No they do not produce radiation.

Do the turbines produce electromagnetic fields?

No they do not produce electromagnetic fields or affect any equipment in the vicinity.

Will the turbine affect my or my neighbour's property price?

No, it could add value to your property if you generate your own energy supply and your neighbour's property prices should not be affected.

FAQs - Electricity Metering

What is a grid-connected system?

A grid-connected system feeds power directly into your main distribution board and exports power if there is too much back to the grid; you can also take power from the grid. This is a balanced and synchronous system and will not affect your day-to-day living. Regulations state if there is a power cut the turbine must stop generating for safety.

What is a battery charging system?

A battery charging system provides you with a continuous power source for your house via an inverter, which makes the power from the turbine usable. If you have an off grid site, you would have a diesel generator on stand-by to cover periods when you had no wind at all for a few days (typically because the batteries are sized to give you around 2-3 days worth of storage). If there is too much power from the turbine, it can be diverted into either water or space heating.

What is a direct heating system?

A direct heating system feeds power directly into a series of small heaters (either water or space heaters) and is used in conjunction with your existing heating system. It is the cheapest of our systems but also the most dedicated as you only get power for heat – and you only get that heat when there is wind. Heat can be stored in water or storage heaters and released at times of calm.

Is there a legal requirement for grid connection? How safe are they?

G-83/1 and G-59/1 are the electrical recommendations that apply in the UK, these regulations vary globally. Why not click here and fill out the named 'buy a wind turbine' form to find out more.

Will a turbine keep producing electricity in a power cut?

A grid-connected turbine will have to disconnect for safety reasons if there is a power cut. This is a legal requirement. If you have regular power cuts and need to keep running then a grid connect battery system will provide power even during power cuts.

What is G-83/1 and G-59/1?

In the UK , G-83/1 and G-59/1 are engineering recommendations for the grid connection of an electrical generator to the low voltage network. If a turbine is under 16A per Phase then G-83/1 applies. If it is over 16A per Phase then G-59/1 applies. G- 83/1 is more a notification of connection to the grid whereas G-59/1 seeks permission to connect. This IS a legal requirement, which all small-scale and large-scale generators have to adhere to.

FAQs - How will wind power suit me?

How far does the turbine have to be from my home?

Turbines can be mounted as close as 20 to 50 meters to your home or workplace or as far away as 450 to 500 meters.

Can the turbines be roof mounted?

Following an assessment by a structural engineer to check suitability of roof structure, Proven Energy turbines can be roof mounted on buildings with flat roofs. The loads would be greater than that suited to an average small domestic property.

Do I have enough wind?

There are two main ways of calculating your wind resource, one is to use web based means - the links to which can be found in 'Why Wind Power' in the 'Our Products' area of this website. The other is to install a small anemometer on your site for at least 6 months to a year. We recommend suitable sites have wind speed in excess of 5 meters per second and above with good exposure to the prevailing winds and good site access. Web based measurements of wind speed comes with a significant degree of inaccuracy but are a useful tool for initial guidance taking into account local knowledge and topography of the site.

Is my site suitable for a turbine?

We would recommend a desk or site based assessment of your site or sites. This will let you know if your site is suitable for wind turbines. When assessing a site, due care and attention should be given to high obstacles such as trees, buildings and hills which can block the wind flow and significantly reduce the available wind speed.

What output could I expect from the turbine?

Outputs vary from site to site; site assessment will be needed to work this out. The estimations you receive from this are for indicative purposes only.

What space do I need to erect the turbines?

Each turbine and tilt-up tower combination requires its own “footprint” on the ground. As a rough guide taking the tower height and multiplying it by 2.5 will give you an approximate clearance space. The width required is the rotor diameter +2m to allow enough space to raise and lower the turbine. Guyed towers might require more space. To discuss your requirements why not complete the enquiry form on our website and someone will call you back to discuss, click on 'buy a wind turbine'.

Can I put a turbine in my garden or on the roof of my house?

If you have a big garden with good exposure then you will have a good chance of having a suitable site. Our turbines are generally not suitable for domestic roof installations. To discuss your requirements why not complete the enquiry form on our website and someone will call you back to discuss, click on 'buy a wind turbine'.

Can the turbines and towers be painted?

The towers can be painted any colour that you wish. The turbine heads can also be painted but we prefer to keep them black where possible as through time the paint can flake and chip on the plastic covers. The 6kW and 15kW turbines are supplied in black or white.

FAQs - Funding your Turbine

How long will the turbine take to pay back?

Paybacks will depend on several factors. The main ones being your wind resource, what you pay or get paid for your electricity and if you get any sort of grants for the project. Between five and seven years might be achievable or even exceeded. Often in remote areas a wind turbine is the lowest cost option for continuous electricity supply and payback will be instant!

Can I get grant assistance?

Possibly! Please refer to our website for further details and links to current grants.

Is it simple to apply for a grant?

The UK domestic grants are very straightforward. EU, business and community grants can involve a bit more and sometimes may be better completed by a professional for a fee.

How much can I get paid for the electricity I produce?

Payment for exporting electricity to the grid will vary depending on the country of your intended location, to find out more about the situation in your local market why not contact your nearest reseller or installer - you can find them by clicking here.

What are ROCs?

These apply in the UK only but other counties may have something similar. ROCs are Renewable Obligations Certificates and are a green certificate that you sell to electricity companies. At the end of the year electricity companies can offset the amount of toxins they have produced with these certificates. This betters the environment and ensures electricity companies are not penalised for not meeting their targets. To find out more about the situation in your local market why not contact your nearest reseller or installer - you can find them by clicking here.

Should I get paid for exported electricity?

It depends on what you're generating and what you're consuming. If you consume most of what you use as you have a high base load then there probably isn't much point. If you could potentially export quite a lot then it may be worth spending the additional money on the meter – please see our export metering datasheet. In the UK it is possible to export but in other countries you should check with your electricity supplier if it is possible. To find out more about the situation in your local market why not contact your nearest reseller or installer - you can find them by clicking here.

what rate of VAT applies to me?

Each EU country has its own rates of VAT. In the UK there are three rates.

Standard rate - 15% Applicable to UK businesses and EU businesses without EU VAT number.

Reduced rate - 5% UK domestic householders

Zero rate -0% UK new builds and EU businesses with a VAT number, and other export sales.

For further information please contact your local reseller, or click the link below.

www.direct.gov.uk

FAQs - Installation of the Turbine

Can I build my own tower?

You can build your own tower but we do not recommend this, as we are unable to guarantee it. We can provide you with all the loadings of the turbine but it would be up to you to calculate and design a suitable tower. A tower mount would be required in this case to fit our turbine on any tower. This tower mount can be either a straight pipe or flanged.

Can I do my own foundation work?

If you are hands on we encourage you to do your own foundation work or arrange a builder to do it for you. We will provide you with all the instructions and the steelwork required to do this.

Can I install a turbine myself?

Installing the turbine yourself would affect the warranty and also void yourself from many grant schemes, as most require the turbine to be installed by an approved installer. In most cases installation costs are less than the benefits which grants would deliver.

Where are the most extreme installations?

We have turbines in hurricane and typhoon areas - one on top of a school in Japan which survived intact the worst typhoon to hit Japan in 100 years; the turbine ran throughout. We also have one near the top of Ben Nevis - Scotland's highest mountain, and on Triglav - Slovenia's highest mountain. There is a Proven 11 on top of the Greenland ice shelf and several powering the Belgian research station in Antarctica. A Proven 11 is powering telecoms in the Saudi Arabian desert - where solar panels got too hot to work!

We are currently updating the turbine locator to show all of these.

FAQs - Products

What are the main turbine sizes Proven Energy manufacture?

3.2kW, 6kW and 15kW

What heights are they?

The Proven 7 is available on an 11m mast, the Proven 11 is available on a 15m mast and the Proven 35 is also available on a 15m mast. Please see 'Our Products' page for further information on towers. Alternatives are available but we recommend you talk this through with your installer. The higher the tower height is, the more wind there is available thus maximising investment and increasing carbon reduction.

What are the turbines made of?

The turbines are all made of the same materials with only a few small exceptions. The blades on the 3.2kW turbines are polypropylene whereas the 6kW and 15kW blades are thermoplastic glass composite. Other than that the towers are all galvanised steel and the covers are polypropylene or hardened polypropylene. The blades of the 3.2kW will soon be made from thermoplastic glass composite to standardise the product range. One huge advantage of Proven Blade materials is that they are almost entirely erosion proof - so they survive in sandstorms and hailstorms where others have disintegrated!

Why do the turbines look the way they do?

The turbines are downwind so that our flexible blades can fold down in severe storms, while still running and producing, without hitting the tower. This design is the result of extensive research and testing over many years, and has the advantage of nullifying the destructive bending stresses in normal wind turbine blades.

Will turbulent wind effect my turbine?

Proven wind turbines are very unusual in that they can operate in turbulent sites that would destroy other turbine designs, this is because of our flexible self governing blade system. In a turbulent site some power loss is inevitable - so choosing a Proven Energy turbine will ensure power loss is minimised.

Why are Proven Turbines made so robust?

Surviving storms is hard work for a wind turbine, many other designs are destroyed by stormy weather. From our beginnings in 1980 Proven Energy have strived to make wind turbines that will survive no matter what the weather and Scotland has been a great base for bad weather testing! The Proven Energy design is the result of inspiration, invention, severe testing and over twenty seven years of development. Your investment in clean renewable energy should be enduring, an investment made not just for you, but for our children too.

What is the warranty offered?

We offer a 2-year standard warranty and can extend it to up to 5-years cover upon request.

How does the turbine cope with a 1-Ph or 3-Ph site?

It doesn’t matter if the site is 1-Ph or 3-Ph as we will split the output over three Phases instead of one if it is 3-Ph. This is easy to do and incurs no extra costs.

What is the Proven QA procedure?

Every turbine is checked before leaving Proven Energy. We are working towards ISO9001 and IEC61400-2 (the new international standard for small-scale wind turbines), which will help to further ensure the quality of our turbines.

FAQs - Planning approval for your Turbine

Do I need planning permission?

Planning permission is required in the UK but planning regulations vary globally. A planning pack is available from the 'our products' section of the website, but we recommend you 'take the tour' to find out more about, planning and installation. To find out more about your local market, why not click on 'buy a wind turbine' or check with your local reseller by finding them in the reseller locator.

Can I appeal a planner's decision?

A planner's decision can be appealed if you follow the appeal process as per the instructions on your application form.

Are there guidelines to help my application?

Unlike larger-scale wind which has a complete set of guidelines, small-scale wind doesn't have anything so comprehensive. In Scotland the PAN 45 and in England and Wales the - PPG / PPS 22 help encourage planners to approve small-scale renewable projects, this does help a planning application through. Scotland has nothing formal yet but like England , Wales and Northern Ireland , most planners are supportive.

You can also contact your local authority for further information

FAQs - Will my turbine require servicing?

What is the servicing frequency?

The turbines require annual servicing, by an accredited installer. As part of the warranty agreement, the turbine HAS to be serviced annually.

What is involved in servicing?

Once a year, the turbine is lowered to ground level (using the hinged tower), the covers are removed and a full service of parts is conducted.

Can I do my own servicing?

You can if you receive the correct training but we would encourage you to take out a service agreement.

Can I get a service and maintenance plan?

Yes, service and maintenance plans are available and a quotation for this can be prepared for you.