

Domestic Wind Power

MEA factsheet #2b



Using domestic wind power

Using a wind powered turbine to generate domestic electricity can help to reduce your carbon footprint. The Energy Saving Trust estimate that by 2050, small scale wind turbines could be generating 30-40% of all UK electricity needs. A number of different types of wind turbine are now on the market, making domestic wind power more viable. And the new feed-in tariffs mean you can be paid for energy you produce and recoup your initial investment two or three times over.

Different types of technology

Domestic wind turbines can either be large free standing units or smaller building integrated designs. Different styles of turbine (see images below) allow for either the horizontal wind typical of hill tops (horizontal axis) or the more turbulent and often vertical wind conditions found in urban areas (vertical axis). These systems can generate energy ranging from a few kWh per year to over 15,000kWh per year. As a guide, the average household uses about 3600kWh per year. There is therefore certainly the potential for a household to generate all its electricity from wind power, providing the site is suitably windy and has an appropriate space/strong wall on which to install the turbine.



Horizontal axis wind turbines can be building or floor mounted. They work best with horizontal wind flow and come in a range of sizes.



Vertical axis wind turbines can also be building or floor mounted. They work with both horizontal and vertical wind flows and also come in a range of sizes.

Cost Effectiveness

The cost effectiveness of a domestic wind turbine depends on the site and the type of turbine installed. All wind installations need an average wind speed of at least 4.5 metres per second (m/s) and will perform best at above 5-6 m/s. You can find the average wind speed for your grid reference or postcode area online. This may not take into account local factors – a valley location will get much less wind than a nearby hilltop, for example. In particular, wind turbines are not recommended for urban areas due to turbulence from neighbouring buildings.

To find the average wind speed for your area, go to www.decc.gov.uk and search for windspeed database.

Because neither wind speed nor your electricity needs are constant, you will still need a mains supply for when you can't generate enough. However, new two-way meters coupled with the feed-in tariffs incentive (see below) make it possible to sell excess electricity back to the national grid. This will make a significant difference to the cost effectiveness of installation. Generally, larger turbines will pay for themselves more quickly than smaller ones. Ultimately, the location and size of site and the amount of energy required dictates the type of turbine to be purchased. We recommend you consult a professional installer or manufacturer.

Feed-In Tariffs

Feed In Tarriffs (FITS) is a new Government-backed initiative to make it more worthwhile installing renewable or low carbon energy technology, including wind turbines, in your home, business or community. By using a special two-way meter, FITS allows you to sell electricity into the national grid at a higher rate than you would buy it. Fully insulating your home and using as many energy saving technologies as possible will maximise your income from the scheme. In addition, you get paid for any energy you produce, even if you use it all yourself. Thirdly, even if you're not fortunate enough to become self sufficient in electricity, the amount you have to buy in from your supplier will drastically reduce.

The exact amount earned and saved depends on the type and scale of the technology. Generally, over the lifetime of the tariff you will recoup the initial investment at least two or three times over. The tariffs will be index linked to allow for inflation. To qualify for FITS payments you must use an MCS registered supplier or installer. Generally, small-scale wind installations will not need planning permission unless you are in a listed building or conservation area but you should check with your local authority first.



Further Information:

General information

MCS Registered Products and Installers

Approved FITS scheme installers
020 7090 1082
microgenerationcertification.org

Energy Saving Trust

0800 512012
energysavingtrust.org.uk

Centre for Alternative Technology

01564 705950
cat.org.uk

European Wind Energy Association

www.ewea.org

Suppliers and Installers

Please note that this list is not exhaustive. The companies listed are offered as a starting point for enquiries but with no implied recommendation of any product or service.

Ownergy

020 7173 5010
www.ownergy.co.uk

Quiet Revolution

020 7014 3399
www.quietrevolution.co.uk

Renewable Devices Energy Solutions Ltd

0131 535 3403
www.renewabledevices.com

AMPAIR Boost Energy Systems Ltd

01344 303 313 www.ampair.com

Evance

01509 215669 www.evancewind.com

Supplier and Installer Directories

www.accessrenewables.co.uk
www.realassurance.org.uk

Compiled June 2010

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