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Should I put a windmill on my house to save the planet?

With growing alarm about man-made Climate Change, some people are deciding to generate their own electricity at home using 'clean' technologies such as wind turbines. But some of these measures are an expensive way to achieve very little. The article below tells you what to watch out for, and tells you which other measures you should take to have more impact on your personal contribution to Climate Change.

Wind energy is a tried and tested technology that has been used for centuries. More recently it has become a popular way to generate electricity, as concern has grown about man-made Climate Change. Electricity generated from the wind does not produce any carbon dioxide, and has none of the worries associated with nuclear power. As a result, many have come to see it as a major part of the solution for man-made Climate Change. If we could generate a substantial portion of our electricity from wind, we would massively reduce the amount of carbon dioxide that we emit into the atmosphere. Furthermore, the cost of generating electricity from large wind turbines is falling, and is expected soon to be cost competitive with electricity generation from fossil fuels.

As a result of this, wind farms have sprung up all over the place, with enormous turbines that each generate enough electricity to power thousands of homes. Some people have also tried to replicate this technology on a small scale, by installing a small wind turbine on their house. Most famously in the UK, David Cameron, the leader of the Conservative Party, had a small wind turbine installed on the roof of his London home.

However, for most households, especially in cities, wind turbines are an expensive way to achieve very little. In fact they are almost useless. It has been calculated that a 1.75 metre diameter wind turbine, in an area with UK average wind speed of 4 metres a second, will produce under 5% of an average UK household's annual electricity consumption. And this assumes that the turbine is working efficiently.

However in cities, the buildings cause a great deal of wind turbulence, and slow down wind speeds. Therefore to make a turbine work efficiently it would need to be fixed far above a house (up to 10 metres). Fixing a windmill on a long pole like this would likely cause serious damage to your house, as would trying to go for a bigger turbine to generate a larger proportion of your electricity.



The only case when you should consider a wind turbine is when you can site it far enough from any obstacles like buildings, and in a relatively windy site. Some people who live in the country are able to set up turbines that generate a significant proportion of their own electricity.

However, the vast majority of people live in cities, where small wind turbines are next to useless. So what should you do instead? The first thing you should focus on is using energy much more efficiently, by insulating your home to save heat, installing a super-efficient condensing boiler, buying energy-efficient appliances like fridges and washing machines, and installing low energy light bulbs.

Once you have taken these basic measures, you can start to think about generating your own energy using other 'clean' technologies. The most cost effective of these is generally solar hot water, where solar panels on your roof provide up to 70% of your annual hot water needs by using the sun's heat. You can also consider using a ground source heat pump to heat your home, and solar PV panels on your roof to generate electricity, but these measures can be expensive, and so will not be for everyone. More details of all these technologies are available on downwithco2.co.uk.

Unfortunately small wind turbines in their current design are not the way forward for the vast majority of us. It is possible that in the future someone will come up with a better design that can work in cities, but until then we will have to carry on building the larger versions, and take other actions to reduce our home's contribution to Climate Change.

About Downwithco2.co.uk

DownwithCO2.co.uk makes it easy for people to make big cuts in their gas or electricity usage. By signing up for five basic actions on the site, people can initiate actions that will reduce their home's carbon dioxide emissions by over 3 tonnes a year with little or no impact on their daily lives. This is equivalent to taking a car off the road for each home. Even taking one or two of these steps has a big impact.

In under 30 minutes, householders can set in motion the following five changes:

1. Install home insulation
2. Upgrade to a super-efficient condensing boiler
3. Replace light bulbs with low energy bulbs
4. Buy an energy efficient fridge, dishwasher or washing machine when the current one needs replacing
5. Install a solar hot water system

The site also features information and contacts for more advanced measures to reduce carbon emissions, such as solar electricity and ground source heat pumps.