Home wind turbine tower

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The wind turbine, which is installed on top of a tall tower, collects wind energy and converts it into electricity. The turbine output is then made electrically compatible with the utility and the output is fed into the household wiring at the breaker panel.

The home is served simultaneously by the wind turbine and the utility. If the wind speed is below about 7 mph there will be no output from the wind turbine and all the needed energy is bought from the utility. As the wind speed increases the turbine output begins and increases and the amount of energy purchased from the utility is proportionately decreased. When the turbine output is more than the house needs, the excess electricity is sold to the utility. All of this is done automatically. There are no batteries in a standard residential wind system.

The wind turbine typically lowers your utility bill by 50-100%. It is not uncommon for homeowners with total electric homes and Bergey turbines to have monthly utility bills of $15-$20 for most of the year. In northern parts of the country, where less air conditioning is used, the bills can be very low year round.

Wind turbines produce no pollution and by using wind power you will be offsetting pollution that would have been generated by your utility company. Over its nominal 30 year life a BWC EXCEL 10 or Excel 15 will offset approximately 1.2 – 3 tons of air pollutants and 200 – 500 tons of greenhouse gases.

No. For residential systems the cost of taking wind measurements is not justified in most situations. Wind resource data published by the U.S. Dept. of Energy, 2Tier and AWS Scientific is sufficient to predict performance. In very hilly or mountainous areas, however, it may be prudent to take wind data before purchasing a system to ensure that your site in not in a sheltered area.

Bergey Windpower sells more residential systems than anyone else because our turbines have proven to be the most reliable on the market. Our turbines have only 2 – 4 moving parts and do not require any regular maintenance. After a 66 month test of one of our 10 kW units, Wisconsin Power & Light concluded that, "The turbines" reliability could not be improved upon." Our turbines are designed to last 30-50 years or more and they operate completely automatically.

Federal regulations (PURPA) require utilities to allow you to install a wind generator and to pay you for any excess power you produce. Bergey Windpower and its dealers can assist you in arranging the required utility company approvals.

No, a wind turbine is easily retrofitted to virtually any home without need of changing any wiring or appliances. In some states a second utility meter will be added, however, so that the utility can know how much electricity you have sold to them.

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Usually a tower of between 80-140 feet is supplied along with the wind turbine. Towers this tall are needed to get above the turbulence generated by obstacles and trees on the ground. Also, wind velocity, and, therefore, wind turbine performance, increases as you get higher off the ground. For most situations an 80 or 100 foot tower is sufficient. The most economical type of tower is the guyed lattice type, but many customers prefer the slightly more costly self-supporting lattice tower due to its smaller footprint.

A Bergey residential wind turbine costs approximately $65,000 - 95,000 to install. The large range in costs is due to different types and heights of towers and variations in the amount of construction work required. Your Bergey dealer can do a site survey and provide you with a firm quotation. Small wind turbine qualify for federal tax credits and state rebates, where available. For businesses there are also substantial depreciation benefits. These incentives can greatly reduce your costs and payback period.

That depends on your cost of electricity and average wind speed. The wind system will usually recoup its investment through utility savings within 5 – 10 years and after that the electricity it produces will be virtually free. Compared to purchasing utility power, a wind system can be a good investment because your money goes to increasing the value of your home rather than just paying for a service. Many people buy wind systems for their retirement because they are concerned about utility rate increases.

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