

Is Wind Energy Right for You?

A Consumer's Guide Checklist for Small Wind Electric Systems

Before investing in a wind turbine for your home, farm, or business, make sure that you can confidently answer "yes" to each of the following questions. For more information see http://en.openei.org/wiki/Small_Wind_Guidebook.

1. Do you have enough wind?

Wind is the fuel for your wind electric system and has a huge effect on energy output. Your site should have at least a 10 mph annual average wind speed at the top of your tower. Ask for a written wind resource and performance estimate based on Department of Energy wind maps or a trusted wind resource consultancy.

Yes No

2. Do you have enough space?

Wind turbines are typically best suited for rural properties of at least 1 acre or more in size, depending on the topography and size of wind turbine. Industry best practices recommend that a small wind turbine be placed at least one tower height away from property lines or neighboring homes.

Yes No

3. Is your tower tall enough?

Putting a wind turbine on too short a tower is akin to putting a solar panel in the shade. Wind turbine rotors must be placed above the turbulent flow of wind caused by obstructions, typically on towers 80 to 140 feet tall.

Yes No

4. Is your energy estimate realistic?

Wind turbine performance can be difficult to predict. As a general guideline, a small wind turbine will generate 1300 to 2200 kWh annually per rated kW at a site with average annual hub height wind speeds of 12 to 14 mph. Be conservative and compare estimates against the manufacturer's certified energy performance tests.

Yes No

5. Is your wind turbine model certified?

It is important to choose a wind turbine design that offers a proven history in safety, performance, and functionality, and a sufficient warranty to meet your needs. Your turbine model should be certified to national standards (American Wind Energy Association standard AWEA9.1-2009). Some incentive programs require this certification.

Yes No

6. Do you have a maintenance plan?

A well-designed turbine can last 20 years or more; however, like your car, it requires occasional inspection and maintenance to run smoothly. Check the owner's manual for recommended routine maintenance and set aside a maintenance and repair budget. Identify a local maintenance contractor.

Yes No

7. Have you explored all financing and incentives available?

State, federal, or utility incentives may be available in your area. Consult the Database of State Incentives for Renewables and Efficiency (dsireusa.org) for the latest. In addition, a growing number of lenders offer low-interest loans for renewable energy projects.

Yes No

8. Does your project satisfy local requirements?

Your city or county's permitting process will legally determine whether or not you will be able to build your proposed wind electric system, while the zoning ordinances will determine how it will be built (maximum height, required setbacks from property lines, etc). In addition, utilities have requirements for connecting a wind electric system to the grid. Check your local requirements, which may impact the project cost and development timeline.

Yes No

9. Are your neighbors supportive of the project?

Conditional Use Permits may require public comment before your proposed project is given the legal go-ahead. Even if not required, it is helpful to include your neighbors and address any concerns early on in the process.

Yes No

10. Do you have an experienced installation contractor?

The turbine manufacturer may have a list of recommended installers in your area. A credible installer will be able to complete all permitting and interconnection approvals and will offer a workmanship warranty. Check the Better Business Bureau for complaints, and ask for customer references and a list of similar projects completed.

Yes No

Small Wind Electric Systems

Most Common Mistakes and How to Avoid Them

Mistake #1. Choosing a Tower that is Too Short

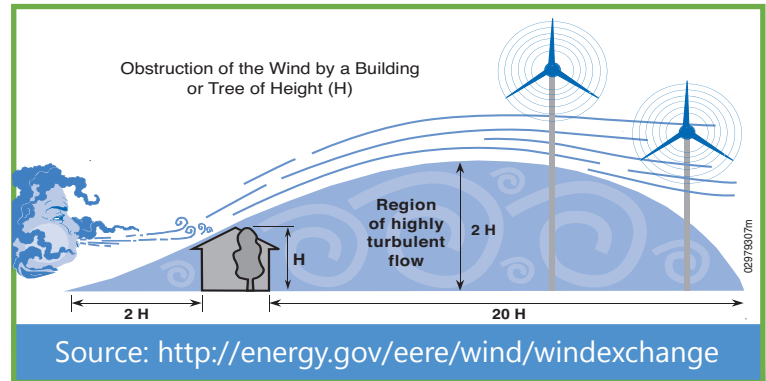
A well-designed wind turbine is useless without the fuel. A wind turbine that doesn't have access to smooth, steady winds is comparable to a well-designed automobile stuck with an empty gas tank.

Problem: Obstructions & Turbulence

Even on a site with a good wind resource, physical obstructions can cause turbulence that spoils the aerodynamic performance of the turbine blades, reducing power output, and causing excessive wear.

Solution: Tall Tower Height

To access smooth winds, the turbine rotor must be placed at a height above the turbulent flow of wind. Industry best practices recommend a tower height of at least 30 feet above the tallest obstacle within 500-feet, including the future height of surrounding trees or new buildings.



Mistake # 2. Installing an Unproven Wind Turbine Design

There are a lot of different wind turbine models on the market, and hundreds that have come and gone. It can be hard for consumers to figure out which ones will produce meaningful amounts of electricity.

Problem: Short-sighted savings

Consumers invest in an unproven, but often cheaper, wind turbine model in order to lower the upfront cost of their system. The turbine fails to deliver the promised energy or fails altogether.

Solution: Certification

Independent, accredited turbine certification provides a simple and reliable way for consumers to find a turbine model that meets safety, performance, and functionality standards.

Which Wind Turbine Models are Certified?

Check ratings and certification status here:

Small Wind Certification Council

www.smallwindcertification.org

Interstate Turbine Advisory Council

www.cesa.org/projects/ITAC/itac-unified-list-of-wind-turbines

Intertek

www.intertek.com/wind/small/directory

Mistake #3. Setting Unrealistic Expectations

If an offer seems too good to be true, it usually is. Small wind turbines are not right for everyone and it is important to do your homework and make sure it is right for you.

Problem: Unrealistic Marketing Claims

Consumers are lured by glossy brochures claiming "maintenance-free" or "low-wind speed" or "silent operation" wind turbines that are not field proven and may not reflect reality.

Solution: Do Your Homework

Plan a budget and schedule for maintenance, ensure that your site has high enough wind speeds to generate power, verify sales claims with an independent source, and talk with customer references.



A properly designed wind turbine installed above surrounding obstructions

The Northwest Wind Resource & Action Center provides timely, accurate information on wind energy issues in the Pacific Northwest. It is supported in part with funding from the U.S. Department of Energy and managed by Renewable Northwest, Oregon Department of Energy, and Northwest SEED. Learn more at www.nwwindcenter.org.