



Residential Energy Tax Credit Certification

# Wind Electric System Worksheet

## Oregon Department of Energy

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Salem, OR 97301-3737  
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Web site: [www.oregon.gov/energy](http://www.oregon.gov/energy)

### FOR OFFICE USE ONLY

File no:

Date received:

## 1. Identification

Name:

Mailing address:

City:

Oregon County:

State:

Zip:

## 2. Type of Wind Project

System type (check one);

1. Provide a brief technical description of the system:

2. Describe what wind-generated energy will be used for:

3. Directions to project site:

4. Is the wind system:

An addition to or expansion of an existing system

A new system

5. How much of your wind-generated energy goes to the electric utility?

All       Some       None

6. Are you using net metering?  Yes     No

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### 3. Wind Resources

1. What is the topography within a ¼ mile radius of the proposed wind system? Check all that apply.

Terrain:  Flat

Shallow variations

Rolling hills

Steep slopes

Wind obstructions:  Over 50-foot trees

30-50-foot trees

1-story structures

2-story or more structure

2. For the site and wind turbine tower height you anticipate, will the wind turbine be at least 30 feet higher than the nearest obstruction(s) to the prevailing wind directions (throughout the year) within 300 foot horizontal distance from the tower?  Yes  No

3. **Wind Data** Use one of the methods (a, b c, or d) below:

- a. If you have collected average monthly wind speed statistics for a year at or near the proposed wind turbine site, fill in the information below for Site 1 only.
- b. If you have less than 12 months of average wind speed statistics that were collected at or near your project site, fill in the wind data you have in the Site 1 column. Fill in the columns labeled Site 2 and Site 3 with 12 months' data taken from two nearby wind-monitoring stations.
- c. If you have no average wind-speed statistics collected for your site, use data obtained from a nationally recognized firm that provides estimated wind resource data based on advanced national wind mapping technology OR
- d. If you have no average wind-speed statistics for your site, fill in the columns for Sites 1, 2, and 3 with 12-months wind data taken from three nearby wind monitoring stations

Wind information may be available from the turbine dealer, the Bonneville Power Administration, Oregon State University, various Web sites, your county office of the OSU Extension Service, power plant, airport, utility or your county or city planning department.

#### Average Wind Speeds in Miles per Hour

	Site 1	Site 2	Site 3
January	_____	_____	_____
February	_____	_____	_____
March	_____	_____	_____
April	_____	_____	_____
May	_____	_____	_____
June	_____	_____	_____
July	_____	_____	_____
August	_____	_____	_____
September	_____	_____	_____
October	_____	_____	_____
November	_____	_____	_____
December	_____	_____	_____
Annual Average	_____	_____	_____
Above-ground height of measuring instrument	_____	_____	_____
Source of data	_____	_____	_____
Name of station/site	_____	_____	_____

Note: If you think the wind speed data obtained from nearby wind monitoring stations does not accurately reflect the actual wind resource at your site, or you wish to present additional supporting information, attach a separate sheet. A map or photographs might be useful to illustrate your point.

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## 4. Annual Energy Production

1. Annual wind generation: \_\_\_\_\_ kWh/year

Ask your dealer or manufacturer to provide an estimate of yearly electric energy generation, in kWh, from your system. They will need all the wind data from Section #3 (previous page). Attach a sheet showing the calculations that estimate the annual wind energy generation in kWh/year.

## 5. System Costs

- |  |                 |
|--|-----------------|
| 1. Wind turbine  | \$ _____        |
| 2. Tower, foundation, and guys   | \$ _____        |
| 3. Installation fees   | \$ _____        |
| 4. Utility interconnection equipment costs   | \$ _____        |
| 5. Wind measuring equipment  | \$ _____        |
| 6. Consulting or professional design fees  | \$ _____        |
| 7. Permits, easement, and inspections (\$500 maximum)  | \$ _____        |
| 8. Storage batteries   | \$ _____        |
| 9. Inverters, electronics  | \$ _____        |
| 10. Necessary wiring   | \$ _____        |
| 11. Other miscellaneous costs  | \$ _____        |
| Describe _____   |                 |
| 12. Total wind system cost (add above)   | \$ _____        |
| 13. Deduct dealer or manufacturer's rebates, discounts, refunds and Service contracts                                | \$ _____        |
| <b>14. Total net cost eligible for Oregon Residential Energy Tax Credit</b><br>(Use this amount on application form) | <b>\$ _____</b> |

## 6. Tower Description

Height \_\_\_\_\_ feet Brand \_\_\_\_\_

Type \_\_\_\_\_

Method of anchoring \_\_\_\_\_

## 7. Wind System Description

1. Is your wind system home built?  Yes  No

2. Information on manufacturer or home builder:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

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## 7. Wind System Description continued

4. General description:

Horizontal axis:  Upwind  Downwind

Vertical axis:  Darrieus  Savonius

Other (describe): \_\_\_\_\_

3. Home-built systems only: Attach a graph of wind speed (at the hub) versus watts output.

Blade diameter \_\_\_\_\_ feet      Number of blades \_\_\_\_\_

Blade material \_\_\_\_\_

Generator type \_\_\_\_\_

6. Performance specifications for electric wind systems: (include power curve and energy production spec sheets)

Maximum power output: \_\_\_\_\_ watts

At what wind speed does the complete system start producing useful energy? \_\_\_\_\_ mph

At what upper wind speed does the system stop producing energy? \_\_\_\_\_ mph

Maximum or survival wind speed the turbine and installation can withstand \_\_\_\_\_ mph

7. Output specifications

Voltage \_\_\_\_\_ AC      \_\_\_\_\_ DC      Phases: \_\_\_\_\_

Inverter:  Yes  No      Type: \_\_\_\_\_

Storage:  Yes  No      Type: \_\_\_\_\_

Estimated storage efficiency: \_\_\_\_\_

## 8. MAILING INSTRUCTIONS

Photocopy all documents for your records. Attach a clear copy of this Wind Electric System Worksheet to your original application for the Residential Energy Tax Credit and mail to:

Oregon Department of Energy, 625 Marion St. NE, Salem, OR 97301-3737

