

Wind Gateway Mock-up 12/6/10

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Wind description/basics/links in OpenEI

Wind is caused by the uneven heating of the atmosphere by the sun, variations in the earth's surface, and rotation of the earth. Mountains, bodies of water, and vegetation all influence wind flow patterns^[2], ^[3]. Wind turbines convert the energy in wind to electricity by rotating propeller-like blades around a rotor. The rotor turns the drive shaft, which turns an electric generator. Three key factors affect the amount of energy a turbine can harness from the wind:^[4]

- **Wind speed**
The amount of energy in the wind varies with the cube of the **wind speed** (in other words, if the wind speed doubles, there is eight times more energy in the wind).
- **Density of the air**
The more dense the air, the more energy received by the turbine.
- **Rotor area of the turbine**
A turbine with a rotor twice as large as another will capture four times as much energy from the wind, since *rotor area* increases with the square of the *rotor diameter*.

The Wind Powering America program illustrates the Department of Energy's commitment to dramatically increase the use of wind energy in the United States. The US DOE developed a short [wind power animation](#) that provides an overview of how a wind turbine works as well as the wind resources in the United States.

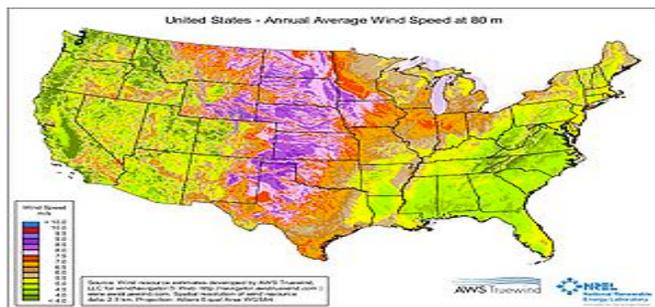


Development Resources – link to full list



Wind Project Development Process – PDF from Wind Powering America

A map/chart/graph related to wind



Powering America

Map of Wind companies/organizations/programs

1. 4 UK Guest Ranch Pool & Spa Low Temperature Geothermal Facility
2. Ace Development Aquaculture Low Temperature Geothermal Facility
3. Agua Calientes Trailer Park Space Heating Low Temperature Geothermal Facility
4. Alive Polarity's Murrieta Hot Spring Pool & Spa Low Temperature Geothermal Facility
5. Americulture Aquaculture Low Temperature Geothermal Facility
6. Aq Dryers Agricultural Drying Low Temperature Geothermal Facility
7. Aqua Caliente County Park Pool

CSV ↗

- Aquaculture
- Agricultural Drying
- District Heating
- Greenhouse
- Industrial
- Pool & Spa
- Snowmelt
- Space Heating

The 'whats new' specific to wind

- [Vermont Standard Offer for Qualifying SPEED Resources \(Vermont\)](#) (6 December 2010 09:02:04)
- [Xcel Energy – Renewable Energy Buy-Back Rates \(Wisconsin\)](#) (6 December 2010 01:00:31)
- [Washington Renewable Energy Production Incentives \(Washington\)](#) (6 December 2010 01:00:17)
- [Supplemental Energy Payments \(SEPs\) \(California\)](#) (6 December 2010 01:00:04)
- [SMUD – Feed-in Tariff \(California\)](#) (6 December 2010 01:00:03)