



Renewable Energy Vermont

Wind Power Factsheet: *Harvesting the wind for clean electricity*

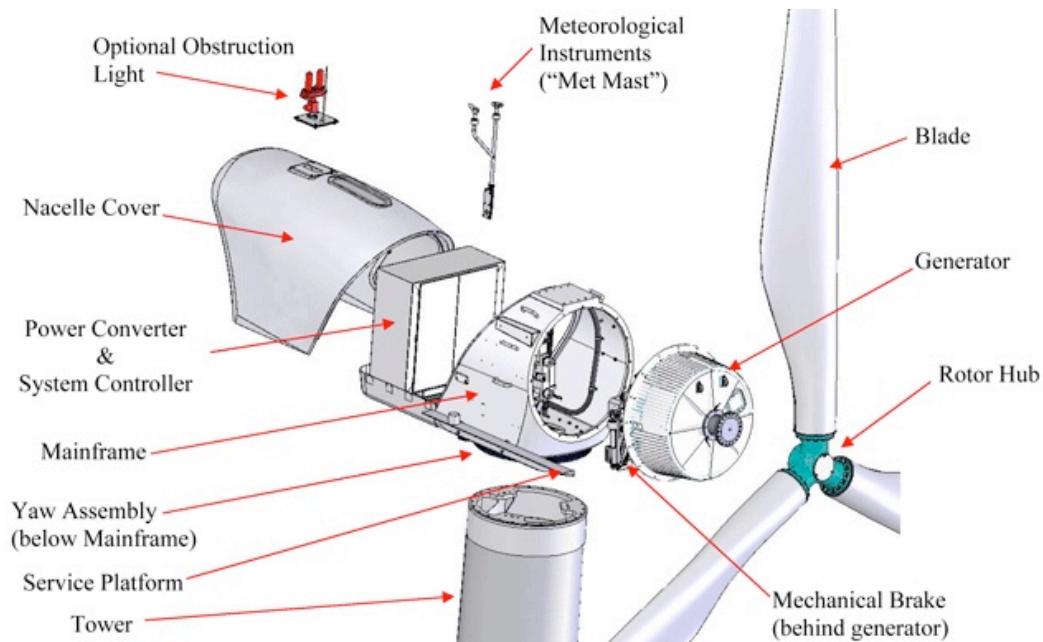
What is Wind Power?

Wind is caused by differences in pressure in the earth's atmosphere. Long ago ship builders and sailors learned to harness the wind to sail the oceans. Early inventors constructed windmills with large wooden propellers to capture the force of the wind and power mechanical efforts, like grinding up grain. Modern wind turbines still use propellers to capture wind power, and generate electricity.



How Do You Get Electricity From the Wind?

High up on a tower, the wind turbine assembly is mounted on a specially designed rotating platform, which "yaws" to align the propeller directly into the wind. An anemometer, which measures wind speed, and other meteorological instruments, tells the turbine which direction has the best wind. Carefully engineered propeller blades are designed to catch and maximize the wind's energy; their rotation spins a generator, which produces the electricity.



Source: Northern Power

Renewable Energy Vermont

Wind Factsheet // www.revermont.org

Where is Wind Power Produced and Consumed?

Wind power can be produced anywhere in the world where the wind blows strong and steady. Wind power is being produced across most of the United States, especially on the Midwest's large flat plains, and desert areas in California and Texas, while higher, mountainous areas are being looked at for other projects.

Wind power is produced across most of Europe, especially Spain and Italy. Britain has large offshore projects, capturing the winds that blow across the ocean. Worldwide, wind power grew 41 percent in 2009, with nearly 160 Gigawatts (a typical non-CFL light bulb takes 60 watts to light up; a Gigawatt equals one *billion* watts!) of power generating capacity. The U.S. counted 35 Gigawatts of wind power capacity in 2009; a 2010 National Renewable Energy Laboratory report showed that the contiguous United States has the potential for over 10,000 Gigawatts of land-based wind power, nine times the current total of U.S. electricity consumption.



Wind turbines at Green Mountain Power's Searsburg, VT project

What Are the Benefits of Wind Power?

Compared to fossil fuel based sources of electricity, wind power provides a zero-emissions solution, producing no climate-warming carbon dioxide, and no polluting, harmful gasses. Wind power keeps power generation local, creating jobs and increasing our energy independence. Plus, once installed, wind power creates electricity for *free*!



Wind turbine at Bolton Valley Ski Resort in Vermont

Did You know?

The first megawatt-size (1.25 MW) turbine in the world was installed and connected to the electric grid in Castleton, Vermont in 1941. The Castleton windmill remained the world's largest until the serial production of wind turbines began in Holland in 1979.

Want to Find Out More About Wind Power?

We've got more information, links and resources at <http://www.revermont.org/main/technology/wind/>

Renewable Energy Vermont

Wind Factsheet // www.revermont.org