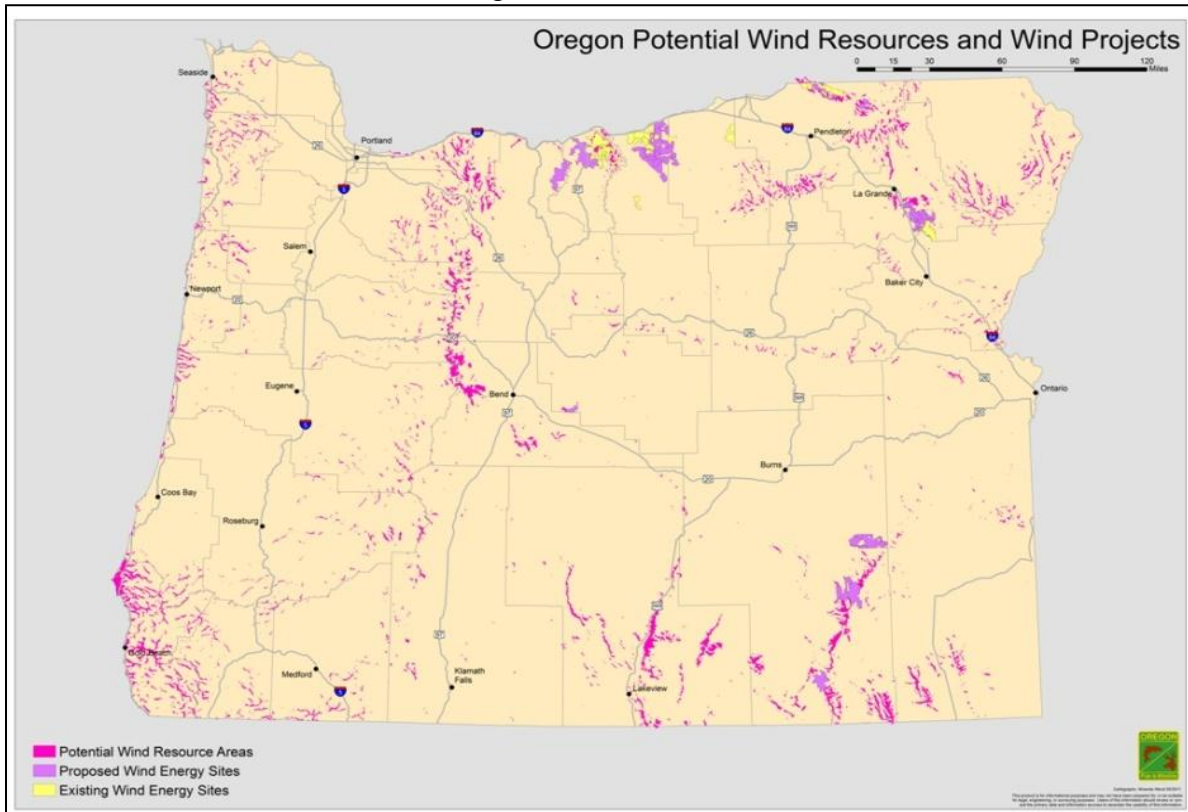


Wind

Oregon Wind Resources



[Map published in May 9, 2011 presentation to House Agriculture and Natural Resources Committee of the Oregon Legislature by Oregon Fish and Wildlife Department]

Contemporary wind energy technology is similar to historic windmills in that it uses blades to capture the wind's kinetic energy. Wind flows over the blades creating lift, similar to the effect of the wings on an airplane, which causes the blades to turn. The blades are connected to a drive shaft that turns an electric generator to produce electricity (EIA). Wind energy is considered an intermittent resource since it is only generated when the wind is blowing (Figure 1). In contrast, biomass, geothermal, wave or fossil fuel energy are considered baseload resources since they are available 24 hours a day, 365 days a year.

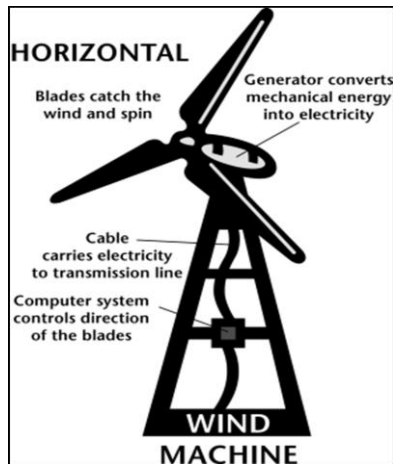
Oregon's wind energy industry has developed mainly in the central and eastern Columbia River area, and in northeastern Oregon (Oregon Department of Energy). Potential resources also

exist, and development has been proposed, in the Cascades, along the Oregon coast, and in southeastern Oregon (see map above). A site suitable for wind energy must have a minimum wind speed of 6.5 meters/second at an altitude of 80 meters or higher (height of a typical turbine). Oregon's wind generation capacity has grown from 25 MW in 1998 to over 2,000 MW in 2010.

Wind energy is a rapidly growing source of renewable energy in the United States; between 2000 and 2009 generation capacity increased almost 14 times, accounting for nine percent of the country's renewable energy in 2009 (U.S. Energy Information Administration (EIA)). Much of this growth has taken place in Texas; in 2010 Texas was the top generator of wind energy in the United States with over a quarter

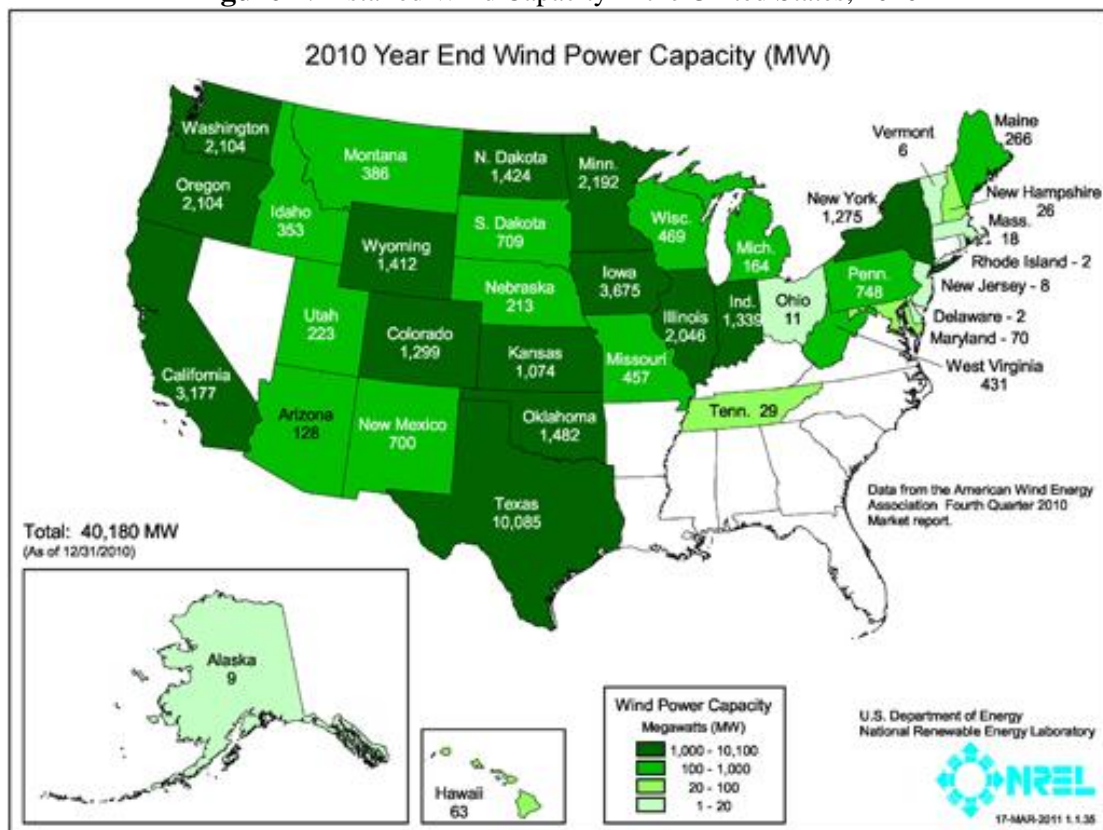
of the installed capacity (Figure 2). In the same year, Oregon was ranked number six.

Figure 1.
Conventional wind turbine



[Figure published by EIA]

Figure 2. Installed Wind Capacity in the United States, 2010



[Figure published by Wind Powering America]