

Wind

Oregon Wind Resources

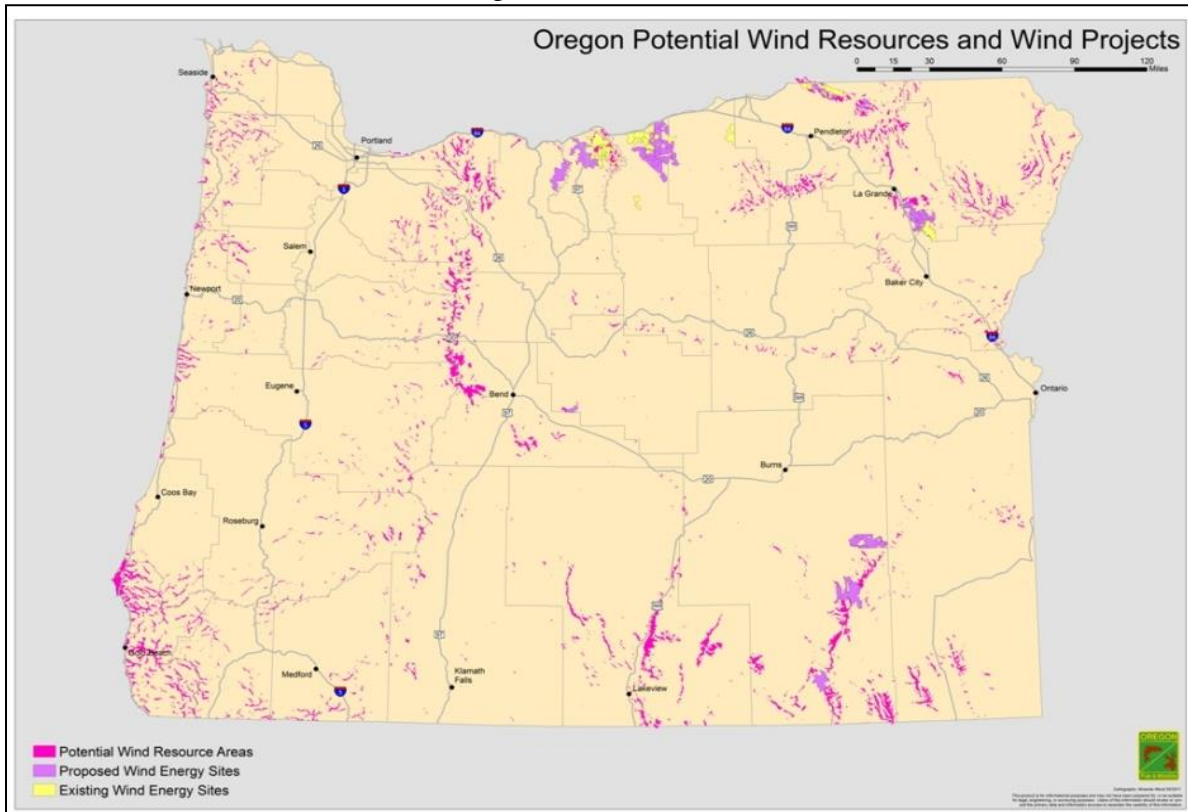


Figure 1: Published in May 9, 2011 presentation to House Agriculture and Natural Resources Committee of the Oregon Legislature by Oregon Fish and Wildlife Department

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 (see Figure 2).

Wind energy is a rapidly growing source of renewable energy in the United States; between 2009 and 2013 generation capacity more than doubled, accounting for 19 percent of the country's renewable energy in 2013 (USDOE Energy Information Administration). Texas is the top generator of wind energy in the United States with over 20 percent of the installed capacity (Figure 3). Oregon is ranked number five.

Oregon's wind energy industry has developed mainly in the central and eastern Columbia River area, and in northeastern Oregon. Potential resources also exist, and developments have been proposed in the Cascades, along the Oregon coast, and in southeastern Oregon (see Figure 1).

Oregon's wind generation capacity has grown from 25 MW in 1998 to over 3,000 MW in 2014 due to development of large-scale wind farms that supply power directly to the electric grid. Smaller scale wind projects also exist in Oregon; there are several community-owned projects consisting of a few mid-sized or large turbines, as well as numerous installations of small-sized turbines that generate power on-site for homes and businesses. The industry for small-scale

turbines is less developed than the large-scale wind industry.

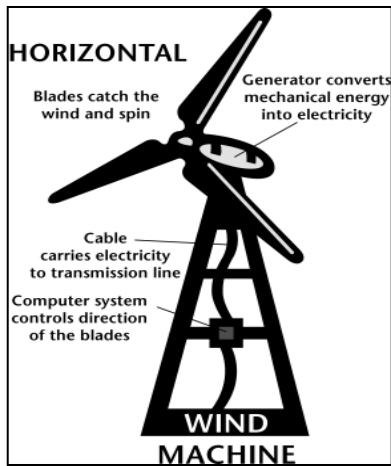


Figure 2: Conventional wind turbine, published by the Energy Information Administration

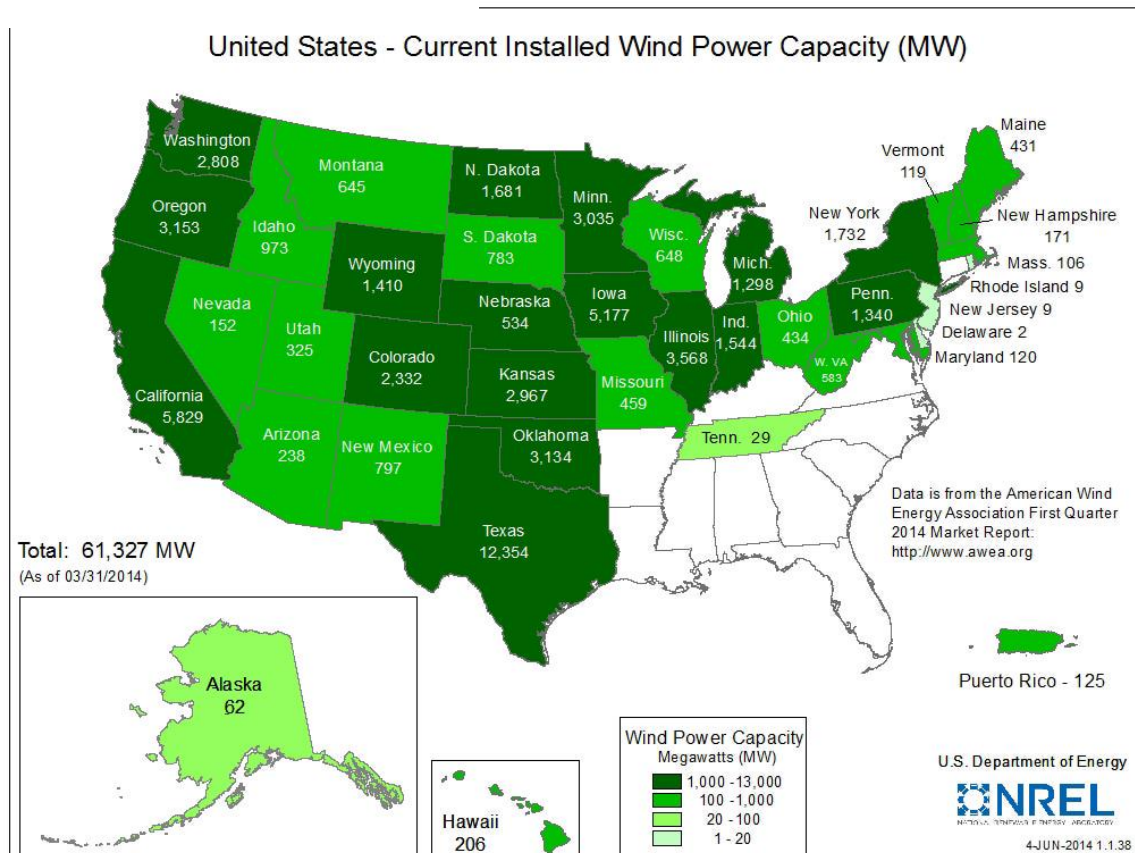


Figure 3: Installed wind capacity in 2014, National Renewable Energy Lab