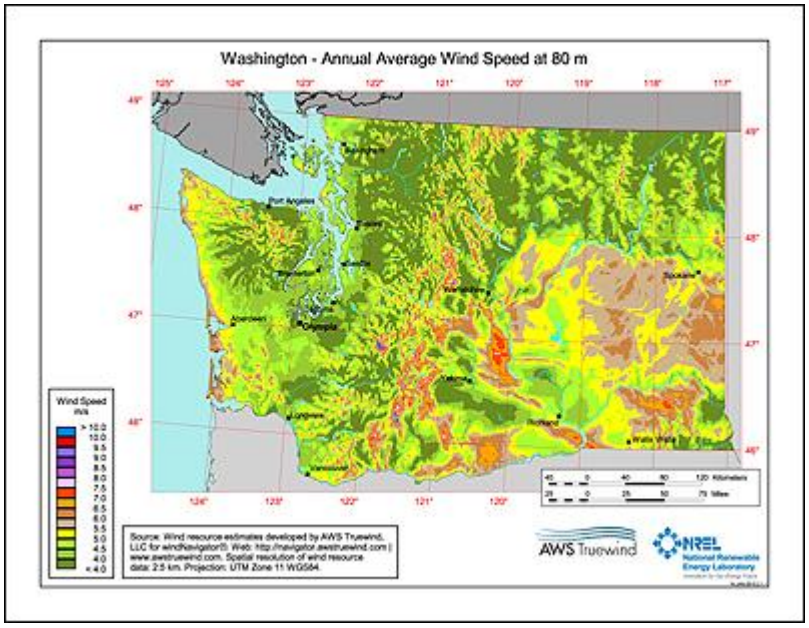
U.S. Department of Energy - Energy Efficiency and Renewable Energy

Wind and Water Power Program - Wind Powering America

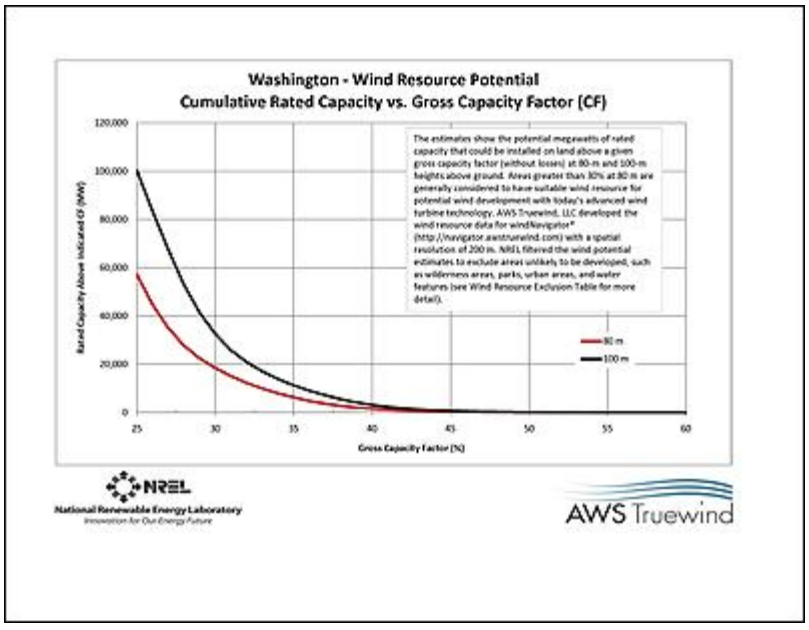
Washington Wind Map and Resource Potential

The Department of Energy's Wind Program and the National Renewable Energy Laboratory (NREL) published a new wind resource map for the state of Washington. The new wind resource map shows the predicted mean annual wind speeds at 80-m height. Presented at a spatial resolution of 2.5 km (interpolated to a finer scale for display). Areas with annual average wind speeds around 6.5 m/s and greater at 80-m height are generally considered to have suitable wind resource for wind development.



This Washington wind map shows the wind resource at 80 meters. You can view a larger version or download a printable map (PDF 3.7 MB) Download Adobe Reader.

Additionally, a national dataset was produced of estimated gross capacity factor (not adjusted for losses) at a spatial resolution of 200 m and heights of 80 m and 100 m. Using AWS Truewind's gross capacity factor data, NREL estimated the windy land area and wind energy potential in various capacity factor ranges for each state. The table (Excel 108 KB) lists the estimates of windy land area with a gross capacity of 30% and greater at 80-m height and the wind energy potential from development of the "available" windy land



The chart shows the potential megawatts of rated capacity above a given gross capacity factor (without losses) at 80-m and 100-m heights above ground. You can view a larger version or download a printable map (PDF 104 KB) Download Adobe Reader.

area after exclusions.

The "Installed Capacity" is the potential megawatts (MW) of rated capacity that could be installed on the available windy land area, and the "Annual Generation" is the estimated annual wind energy generation in gigawatt-hours (GWh) that could be produced from the installed capacity. NREL reduced the wind potential estimates by excluding areas unlikely to be developed such as wilderness areas, parks, urban areas, and water features (see Wind Resource Exclusion Table for more detail). Additional wind potential tables (Excel 208 KB) are included for various capacity factor ranges.

The chart to the right shows the wind resource potential above a given gross capacity factor at both 80-m and 100-m heights for Washington.

These maps and wind potential estimates resulted from a collaborative project between the National Renewable Energy Laboratory and AWS Truewind of Albany, New York. This is the first comprehensive update of the wind energy potential by state since 1993. NREL has worked with AWS Truewind for almost a decade on updating wind resource maps for 36 states and producing validated maps for 50-meter height above ground. U.S. Department of Energy's Wind Powering America project supported the mapping efforts. The Washington 50-meter wind map is still available.

Note: Wind resource at a micro level can vary significantly; therefore, you should get a professional evaluation of your specific area of interest.

If you have a disability and need assistance reading the wind map, please email the Webmaster.