

Virginia Wind Energy Opportunities

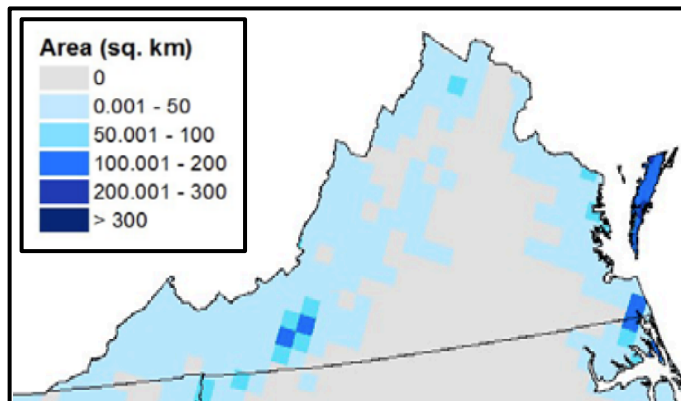
Virginia has great potential for wind energy development within the state. Advanced wind turbine technology and reduced costs have now made wind energy economically feasible throughout Virginia.

A wind project in Virginia could provide beneficial economic development opportunities for local communities. Apex Clean Energy has recently proposed two wind farms in the state: Rocky Forge Wind (75 megawatts) and Pinewood Wind (180 megawatts).

Advanced Turbine Technology

In the past five years, wind turbine technology has greatly evolved. Wind turbine towers can reach up to 459 feet (140 meters) in height. **Taller turbines and longer blades are capable of capturing more wind, thus harnessing more electricity and reducing wind energy prices.**

As turbines increase in hub height, Virginia contains a much greater area of land viable for development. The shading on the map below represents new available land for wind development with modern turbine towers of 360 feet (110 meters) achieving a 35% capacity factor or greater. **Over 7,000 MW of onshore wind potential may exist in Virginia.**



Adapted from National Renewable Energy Lab (2013)

Reduced Costs

Wind energy is now one of the least expensive sources of new power generation in the country. Costs have declined by 39% over the past decade for lower wind speed areas

like Virginia (averaging 13.4 miles per hour, or 6 meters per second). As technology improves, wind energy prices will continue to drop.

Economic Development Opportunities

Virginia is currently home to six wind energy-related manufacturing facilities serving the domestic and international wind industry markets. Developing land-based wind in the state could greatly add to local economic benefits and create more wind energy-related jobs.



Credit: Dennis Schroeder / NREL

Based on the Jobs and Economic Development Index model,* developed by the National Renewable Energy Laboratory (NREL), developing 1,000 MW worth of wind energy capacity in Virginia could:

- Generate approximately 3,751 full-time equivalent jobs during construction periods with a total payroll of \$178 million
- Support approximately 124 ongoing operation jobs with a total annual payroll of \$5.9 million
- Produce approximately \$3 million in extra income for farmers/households or others who lease their land to developers
- Generate \$9.9 million in annual property taxes

Wind energy is currently an untapped resource in Virginia. Yet, with advanced turbine technology and lower costs, **wind energy development could greatly boost Virginia's economy and provide homegrown and affordable energy.**

*Jobs and Economic Development Impact (JEDI) model, developed by the National Renewable Energy Laboratory (NREL). More information about the JEDI model can be found at: <http://1.usa.gov/XpVcWY>

Sources:

American Wind Energy Association (April 10, 2014). "State Wind Energy Statistics: Virginia." <http://bit.ly/1nxb7PJ>
 Joseph Owen Roberts (September 2013). Presentation, Land-Based Wind Potential Changes in the Southeastern U.S., NREL
 Apex Clean Energy "Our projects map" www.apexcleanenergy.com/project-map