Tennessee Wind Energy Opportunities

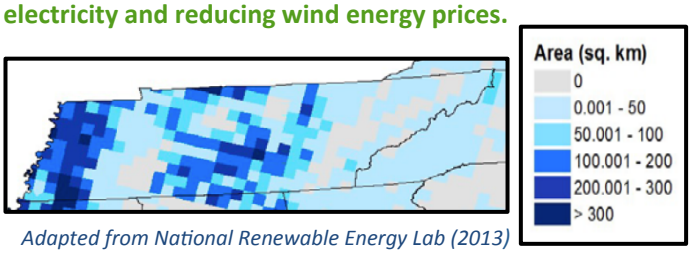
Tennessee is already taking advantage of wind energy. The state is home to the Southeast's first wind farm, Buffalo Mountain, which generates enough electricity to power 3,400 homes a year. Additionally, the Tennessee Valley Authority (TVA) has entered into contracts with wind farms across the Midwest, delivering 1,542 megawatts (MW) of wind energy to TVA customers. TVA recently released a new request for information for renewable energy sources. In TVA's most recent integrated resource plan, the utility stated:

"Wind: Add between 500 and 1,750 MW by 2033, depending on pricing, performance, and integration costs. Given the variability of wind selections in the scenarios, evaluate accelerating wind deliveries into the first 10 years of the plan if operational characteristics and pricing result in lower-cost options."

Now Tennessee has a much greater potential for wind energy development within the state. Advanced wind turbine technology and reduced costs have now made wind energy economically feasible throughout Tennessee. A wind project in Tennessee could provide additional economic development opportunities for local communities.

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.**



Adapted from National Renewable Energy Lab (2013)

As turbines increase in hub height, Tennessee contains a much greater area of land viable for development. The shading on the map above represents new area for wind development for towers up to 360 feet (110 meters) height, achieving a 35% capacity factor or greater. **Over 25,000 MW of wind potential may currently exist in Tennessee.**

Reduced Costs

Wind energy is now one 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 Tennessee (averaging 13.4 miles per hour, or 6 meters per second). As technology improves, wind energy costs will continue to drop.

Economic Development Opportunities

Tennessee is currently home to 10 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 Tennessee could:

- Generate approximately 4,801 full-time equivalent jobs during construction periods with a total payroll of $264 million
- Support approximately 163 ongoing operation jobs with a total annual payroll of $9 million
- Produce approximately $3 million in extra income for farmers/households or others who lease their land to developers
- Generate more than $6.9 million in annual property taxes

Wind energy represents a huge potential economic resource for Tennessee. With advanced turbine technology and lower costs, **wind energy development could greatly boost Tennessee'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:
"Energy Purchases from Wind Farms," (October, 2013). TVA. http://bit.ly/1u6kRh6
Joseph Owen Roberts (September 2013). Presentation, Land-Based Wind Potential Changes in the Southeastern U.S, NREL
TVA (May, 2016): "Request for Information"

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