

Wind Energy and Economic Development in Nebraska



Dave Michael, Nebraska Energy Office/PIX15299

This fact sheet summarizes a recent report by the National Renewable Energy Laboratory (NREL), Economic Development Benefits from Wind Power in Nebraska: A Report for the Nebraska Energy Office, which focuses on the estimated economic development impacts in Nebraska from development and operation of wind power in the state as envisioned in the U.S. Department of Energy's (DOE's) report, 20% Wind Energy by 2030.

Wind power is one of the fastest-growing sources of new electricity generation in the country. It constituted more than 35% of new U.S. electric generating capacity in 2007. In 2008, the United States became the world leader in energy generated from wind power. At the national level, common wind power drivers include Renewable Portfolio Standards (RPS), the federal production tax credit (PTC), and economic development impacts.

A recent report by the U.S. Department of Energy concludes that it is feasible for the United States to derive as much as 20% of its electricity from wind power by 2030 (<http://20percentwind.org/>). This groundbreaking analysis details how the country could achieve this ambitious goal and shows where wind energy is expected to be deployed based on demand for electricity, the distribution of wind resources across the country, and the cost and availability of transmission. Under this national 20% wind scenario, 7,800 megawatts (MW) of new wind power is added in Nebraska.

Explaining the Range of Impacts from Four Scenarios

This analysis uses four scenarios — 1,000 MW, 7,800 MW, community-based project, or non-community-based project — to represent two different amounts of wind energy development and two different estimates of how much local investment will occur under Nebraska's Community-Based Energy Development (C-BED) policy. This policy is expected to have a significant impact on economic development.

Economic Development Impacts Under Four Scenarios

Direct Impacts*	1000 MW Low C-BED	1000 MW High C-BED	7,800 MW Low C-BED	7,800 MW High C-BED
Construction-period employment (short-term jobs)	1,228	2,177	10,301	17,795
Construction-period economic output (millions)	\$150	\$308	\$1,724	\$3,238
Operations-period employment (long-term jobs)**	141	290	1,166	2,269
Operations-period economic output (million \$/yr)**	\$18	\$33	\$144	\$255
Total Impacts (Direct, Indirect, and Induced)				
Construction-period employment (short-term jobs)	2,316	4,199	20,626	36,508
Operations-period employment (long-term jobs)**	264	515	2,171	4,038
Average annual employment impacts (jobs supported on average over the facility's lifetime)***	345	659	1,600	2,925
Average property tax revenue (million \$/yr)***	\$3.3	\$3.3	\$14	\$14
Lifetime economic output (millions)****	\$868	\$1,640	\$7,800	\$14,100

*Low results represent the traditional development low scenario. High results represent the C-BED high scenario. All dollar values are millions of constant 2008 dollars.

**When the total capacity is operating.

***Average annual impacts for 7,800 MW assume a 20-year construction period and 20 years of operations for a total lifetime impact spread over 40 years. Average annual impacts for 1,000 MW assume a 2-year construction period and 20 years of operations for a total impact spread over 22 years.

****Lifetime includes construction and 20 years of operations.

What Is C-BED?

C-BED is a policy that encourages local ownership of wind projects in the state by requiring 33% of gross project revenues to flow to qualified Nebraska individuals or businesses. It was implemented to overcome specific barriers to wind power development in Nebraska. Specifically, C-BED creates a mechanism for Nebraska's public power districts to take advantage of the federal production tax credit (PTC) and eliminates sales and use tax on materials used for C-BED projects. These provisions help to lower the cost of wind power in Nebraska, ensuring that public power acquires least-cost wind power generation. In addition, C-BED provides privately owned wind power generators increased protection from eminent domain and enhances Nebraska's economic development impacts. Ultimately, C-BED enhances public power's prerogatives of securing least-cost resources and supporting rural development while maintaining consistency with Nebraska's traditional citizen-owned public power system.

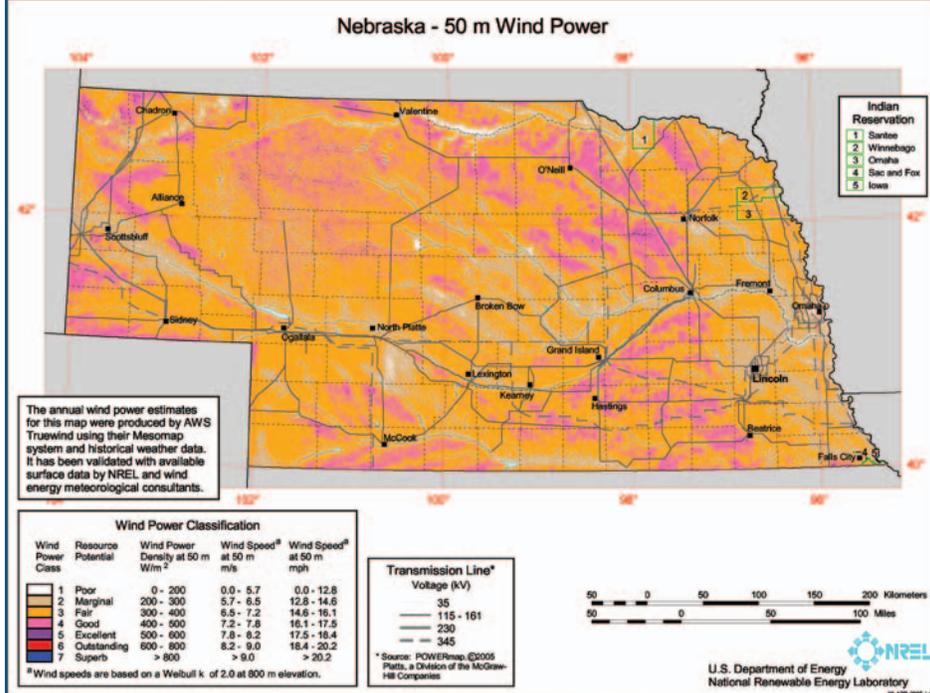
Conclusions

Economic impacts to Nebraska are greatest when there are high levels of local ownership and local manufacturing. The local ownership structure driven by C-BED is popular at present, suggesting that the actual impacts from wind development in the state may be closer to the high end of the range noted above if development continues with its current trajectory. However, even in our low scenarios, wind energy development in the state is expected to support hundreds or even thousands of jobs for many years into the future. Finally, creating a vibrant wind industry in the state may allow Nebraskans the opportunity to capitalize on wind development in surrounding states too.

Methodology and Definitions

Economic impacts are estimated with NREL's Jobs and Economic Development Impacts (JEDI) Wind model (http://www.nrel.gov/analysis/jedi/about_jedi.html). This IMPLAN-based, input-output model includes direct, indirect, and induced impacts.

Direct impacts accrue from expenditures in the wind industry. Direct beneficiaries generally include wind energy developers, construction companies, operations and maintenance personnel, landowners, and equity investors. Indirect impacts accrue in supporting industries as a result of increased demand for basic goods and services. Indirect beneficiaries include material and component suppliers as well as accountants and legal personnel. Induced impacts result from



reinvestment and spending by direct and indirect beneficiaries. Induced benefits are often associated with increased business at local restaurants and retail establishments. In short, induced impacts include all increases in economic activity driven by increased spending of direct and indirect beneficiaries.

The ranges shown here rely on variable levels of C-BED project prevalence and variable levels of local company involvement in projects. In the high scenario, it is assumed that 80% of projects are C-BED projects, while the low scenario assumes only 10% of projects are C-BED. In addition, it is assumed that C-BED projects rely on a moderately higher level of local labor and materials during construction and operations due to an expected increase in local participation in the project resulting from C-BED ownership structures.

For More Information, Contact:

Eric Lantz
National Renewable Energy Laboratory
1617 Cole Blvd. MS3811
Golden, CO 80401
eric.lantz@nrel.gov

The estimated economic impacts to Nebraska from building 1,000 MW of wind power are also included in the full report, which is available as a PDF download at www.nrel.gov/docs/fy09osti/44344.pdf.



www.windpoweringamerica.gov
U.S. Department of Energy