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Wind Energy Development as an Economic Development Strategy for Rural Areas

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Why does wind development make sense for rural areas?

In many rural areas, utility scale wind energy developments can be a great way to expand and grow the economy through direct investment and job creation, in addition to significant potential spinoff development activities. Because of renewable state standards and incentives, including the Federal Production Tax Credit (PTC) and the Ohio SB 232 (which levels the playing field for wind projects by setting a property tax ceiling), more wind companies view Ohio as a new and exciting market for investment.

Siting requirements for wind are also prevalent in Ohio, including good transmission lines and available land and wind resources. Ohio also has a skilled workforce that can construct and provide maintenance on wind systems as well as manufacture component parts for the industry.

Utility Wind Basics

Utility scale wind developments are large “wind farms” that generate 5 megawatts per hour or

greater. They are governed by the Ohio Power Siting Board (OPSB) under provisions found in House Bill 562, 2008 (http://www.legislature.state.oh.us/BillText127/127_HB_562_EN_N.html) and OPSB Docket 08-1024-EL-ORD. Evaluation of these projects requires extensive environmental, economic, and aesthetic considerations, with local government and resident input required by the OPSB in order to move projects forward.

What are the prerequisites for wind developments?

To get started, the local jurisdiction must determine that their location is suitable for a wind farm. Good locations must have fast, steady, nonturbulent winds, and they must be near transmission lines. The American Wind Energy Association (AWEA) has developed a fact sheet, *Ten Steps to Developing a Wind Farm*, to include certain siting criteria (American Wind Energy Association 2009). Here are the four key siting requirements for generation-scale projects.

1. Wind speed. A site must have a minimum

annual average wind speed in the neighborhood of 11–13 miles per hour to be considered (American Wind Energy Association 2009). Wind farm sites are typically preselected using a wind atlas (<http://rredc.nrel.gov/wind/pubs/atlas>). Once potential sites are identified, local winds are monitored for a year or more before wind turbines are constructed. Wind power density (WPD) is the yardstick used to select locations for wind energy development.

2. Access to interconnectivity and distribution. One of the most important factors in turbine siting is access to interconnectivity options that allow the delivery of energy produced to the end consumer. This includes transmission and distribution lines and substations. Wind developers are reluctant to build where transmission lines do not yet exist or where capacity is weak.
3. Land area. At least two acres of land is needed for each wind turbine. With most farms being built today, a minimum of 50 turbines are constructed, requiring a total land mass of 100 acres. In addition to the acreage needed to site the turbines, sufficient land is needed to adequately space the turbines.
4. Environmental factors. Danger to birds and bats has been a concern in some locations, although studies have shown that the number of birds impacted by wind turbines is negligible (http://en.wikipedia.org/wiki/Wind_power).

What are the economic benefits of wind developments?

Wind developments are very significant projects, by any standard. An average-sized project can easily exceed \$300 million in capital investment, generating significant tax revenues, lease payments for land owners, and jobs. A project with 175 turbines that generate 350 megawatts would provide the following benefits.

1. 20 new maintenance technician jobs
 - a. \$900,000 in new payroll per year
 - b. \$14 million new payroll over 15 years
2. 150 construction jobs

- a. \$13 million in payroll for 2–3 years
3. New landowner payments
 - a. \$20 million over the first 15 years
4. Based on an estimated \$6,000 per megawatts in property tax (or payment in lieu of tax), the project would generate \$1.4 million per year to taxing bodies with approximately 70% distributed to school districts and 30% distributed among the county, township, and other tax recipient bodies.

Rural communities benefit directly and indirectly from wind power projects. Just as is the case with new manufacturing jobs, when jobs and additional income are created, new revenues are generated to be spent in local stores, restaurants, and services businesses, boosting the local economy and creating spinoff jobs.

Wind energy offers many benefits beyond rural economic development. Wind energy is “homegrown” energy that can extend nonrenewable energy sources, helping to secure our energy future, reduce energy costs, and reduce our dependence on foreign sources of energy. Wind power produces no air or water emissions, which improves the health of our environment. Perhaps the greatest benefit of all is the hope that wind energy projects can offer to rural Americans who wish to remain on their family farms and make a living from them.

What are the primary issues of concern?

Communities often describe four general areas of concern when considering wind projects. The greatest issue for most residents and landowners is the visual impact. Wind turbines are very large structures that can be seen from miles away. For some people, the sight of wind turbines takes away from the natural beauty of the surrounding environment. Although the actual noise from wind turbines is minimal (about the same volume as a neighbor’s lawn mower), noise is another issue. Locating wind turbines away from populated areas reduces the impact of both of these issues.

Also of importance to many people is the impact on birds and bats, although studies have been inconclusive on the actual impact of wind turbines on bird populations. Making sure that wind turbines are

not sited near heavy bird migration paths can greatly mitigate this problem. Wind developers perform an avian risk assessment to evaluate the risk of collision for birds and bats and to avoid high traffic areas.

How wind projects are taxed is an issue for generation-scale wind development in many states. Some states assess a fee per megawatt of power produced, while others allow for property tax reductions or exemptions. On June 3, 2010, Ohio passed Senate Bill 232 to bring Ohio's tax structure in line with neighboring states. The bill provides for a payment in lieu of taxes (PILOT) of up to \$9,000 per megawatt to the treasurer of the county where the facility is located. To trigger the PILOT, county commissioners must agree to establish an alternative energy zone (AEZ).

Educating and engaging residents as early as possible in the process of wind development projects is critical to addressing these areas of concern at the local level.

Summary

A typical large-scale wind project involves many diverse players. Although the main responsibility for seeing a project through lies with the developer, communities play a very significant role in educating, supporting, and facilitating the project. In the end, it is up to a community to determine whether wind power generation will contribute positively to the local economy.

References

- American Wind Energy Association. 2009. *Ten Steps to Developing a Wind Farm*. www.awea.org/learnabout/publications/upload/Ten_Steps.pdf (accessed April 6, 2011).
- U.S. Department of Energy, Wind Powering America. *Electricity from the Wind: Economic Development for Rural Communities*. http://www.windpowerin-gamerica.gov/docs/economic_development.doc (accessed April 6, 2011).

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