



The Effect of Wind Energy Development on State and Local Economies

*Reduced cost
has renewed
interest in
wind energy
projects.*

Improvements in technology and reductions in cost have pushed many states and communities throughout the United States to take another look at the process of tapping energy from windy skies. Wind-generated electricity today can be cost competitive with conventional fossil fuel or nuclear generation in many parts of the country. This cost competitiveness, coupled with the raised environmental consciousness of the public, has spurred renewed interest in wind energy projects.

Beyond these widely known benefits, few have considered that wind energy is likely to affect state economies differently than the use of traditional fossil fuel technologies. As with any other new local development, wind energy will have both direct and indirect effects on the economy. Direct economic effects of wind energy development include rent to land owners, taxes and employment. Secondary or indirect effects are more difficult to quantify, but can include increased consumer spending power, economic diversification and use of indigenous resources.

Direct economic effects

The direct economic effects of a wind energy project include:

- Increased revenues to local governments and land owners;
- Creation of jobs and demand for local goods and services during construction and operation;
- Additional property tax revenues to local governments.

*Rural land
owners can
reap
substantial
economic
rewards from
wind energy
development.*

Revenues to landowners are paid because land rights for a wind project must be secured in advance by purchase or lease. Rural land owners stand to reap substantial economic rewards (\$50 to \$100 per acre) from wind energy development. Wind developers are essentially securing open space on which to place their wind structures and the turbines themselves occupy only a small percentage of any site. In many cases, farming operations are undisturbed.

Some utilities may purchase land and recover the cost through their base electricity rate. Most independent power producers, however, prefer a leasing agreement that requires less capital

investment;. Lease rates will depend on the value of the land and its potential for other development projects. Such agreements usually include protection from future development upwind that could diminish the site's wind resource potential.

Some states have designated state-owned land for wind projects or have made special arrangements to promote renewable energy development. In Texas, a wind energy project built on easements controlled by the General Land Office generates millions of dollars for public education. In certain areas of California, a large percentage of wind projects are installed on federal land, creating a significant revenue source.

Some states have exempted wind projects from sales and property taxes.

Increased property tax revenues that result from property improvements (turbines, roads, substations) during project development are another direct benefit. California wind companies pay annual property taxes to local governments of \$10 million to \$30 million. Some cities have extended their boundaries into unincorporated land to take advantage of tax revenues from wind development projects. To promote wind energy development, some states have made wind projects exempt from sales tax and property tax for increased value of property. In Minnesota, the property tax exemption was quite unpopular with poor, rural counties where projects were focused. As a result the state offers only partial property tax relief as an incentive, except for smaller projects.

Compared to conventional generation operations, wind energy projects create more jobs per dollar invested and per kilowatt hour (kWh) generated. A New York State Energy Office study recently found that, for identical amounts of electricity produced, wind energy generates 27 percent more jobs than a coal plant and 66 percent more jobs than a natural gas plant. Wind projects create employment opportunities in construction, operation, and maintenance and manufacturing.

A wind power plant can be built in less than a year. For a 50 megawatt (MOO) wind project, 40 full time jobs may be created. Operation and maintenance of a wind power plant generally requires between two and five skilled employees for each 100 turbines. In addition, construction and operation of a wind project creates demand for local goods and services such as construction materials and equipment, maintenance tools, supplies and equipment, and accounting, banking and legal assistance. These economic benefits are not weakened by heavy demands on state and local infrastructure. A wind project requires little support from public services such as water and sewer systems, transportation networks and emergency services.

For communities interested in profiting from their wind resource;, investment in locally-owned cooperatives that develop wind power and sell electricity to a utility offers an opportunity. Wind turbines under cooperative ownership could be arranged either in clusters or distributed widely across many farms. Cooperative wind development has been practiced successfully in many northern European communities.

Increased tax revenues from a wind power project result in additional government spending on services.

Indirect economic effects

Local economies are closely linked by business and personal purchasing patterns. Direct economic effects of a business development project have secondary and multiplying effects that ripple throughout an economy. Increased tax revenues from a wind power project result in additional government spending on local, state and federal services. Employment growth increases household spending on goods and services. When indirect impacts are considered, California's wind energy industry is estimated to employ 5,000 to 6,000 people.

Wind energy projects also contribute to economic diversification of a local economy, which ensures greater stability by minimizing high and low points of business cycles. This effect is particularly important in rural areas that generally have one-dimensional economies. Finally, development of indigenous renewable resources decreases fossil fuels imports, granting a state or local community more independence and control over its energy future.

The economic benefits of wind development projects will help make this renewable resource an attractive option to states and communities in the future.

This brief was summarized by Jeff Dale, National Conference of State Legislatures, from a *Wind Energy Series Report* by Karen Conover, RLA Consulting.

The Wind Energy Issue Briefs are a product of the National Wind Coordinating Committee (NWCC). The NWCC is a collaborative endeavor that includes representatives from electric utilities and support organizations, state legislatures, state utility commissions, consumer advocacy offices, wind equipment suppliers and developers, green power marketers, environmental organizations, and state and federal agencies.

[Full Issue Paper No. 5 | NWCC Publications](#)