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Property Taxation Of Wind Generation Assets

Contributions to the various states and localities vary widely for a long list of reasons.

BY WARREN AULT

Increasingly, communities are recognizing the potential to use wind development as an economic development engine, particularly in rural areas where the profitability of farming has declined. To date, the most universally recognized economic benefit is that which is realized by the local landowner in the form of easement, lease or royalty payments.

In addition to leaseholds that compensate landowners who directly host wind turbines, there exists a potential for local economic benefits in the form of property taxation, production taxation or payments in lieu of taxes. Nationally, property taxation of wind generation (including several alternative mechanisms) is estimated to contribute $43 million per year, based on approximately 6,600 MW of generation.

On average, property tax and other mechanisms are estimated to be $6,400 per MW nameplate capacity (or $2.10/MWh; all examples assume a 30% capacity factor). This is approximately three times the average leasehold or royalty payment and can represent the single-largest long-term financial contribution to a host community's economy brought through wind generation projects.

Significant variability exists both between and within states, with an order of magnitude difference observed between the lowest and highest benchmark values. Methodology for assessment of taxes also varies with most states (or counties) using a combination of five discernable approaches:

- asset valuation;
- economic income;
- comparable sales (of assets);
- power generation; and
- tax exemption (with or without "in lieu" payments).

As turbine sizes have grown, wind turbine siting concerns have become more commonplace, especially in areas with higher population density. While many concerns can be addressed through zoning ordinances, impact studies and educational outreach, there is a need to better understand the potential benefits of property taxation of wind generation.

This is particularly true for commercially developed wind projects. In the absence of local ownership, property tax revenues are emerging as a key component for creating solid value propositions to communities in windy geographies most notably for landowners in the project viewshed who otherwise do not directly receive leasehold payments.

Anecdotal evidence suggests that there have been several instances where existing state legislation – designed with behind-the-meter (residential use) wind turbines in mind has been applied to large-scale commercial wind farms. It is possible such tactics are counterproductive in the long term, due to the potential of fueling organized local opposition to further commercial development activities.

Relative tax rates

Colorado and Texas levy the most taxes on wind generation, approximately $11,000/MW of nameplate capacity ($3.60/MWh). Oklahoma, Pennsylvania, West Virginia and New Mexico receive the least, on average – $1,600/MW of nameplate capacity (53 cents/MWh).

Iowa and North Dakota provide a partial exemption that increases to a reduced tax rate (Iowa starts at 0% and increases 5% per year to 30% in year seven; North Dakota starts at 15% through July 2006 and then moves to 30% for the duration of the initial power purchase agreement).

New York, Kansas and Oklahoma offer wind developers a state exemption on property taxes (New York, 15 years; Kansas, indefinite; Oklahoma, five years). Counties in New York, which must agree to the state exemption, receive approximately

$5,000/MW nameplate, while Oklahoma counties, which are not given that option, average $1,400/MW nameplate. Kansas averages approximately $2,900/MW nameplate and is considering repealing the tax exemption.

What is taxable?

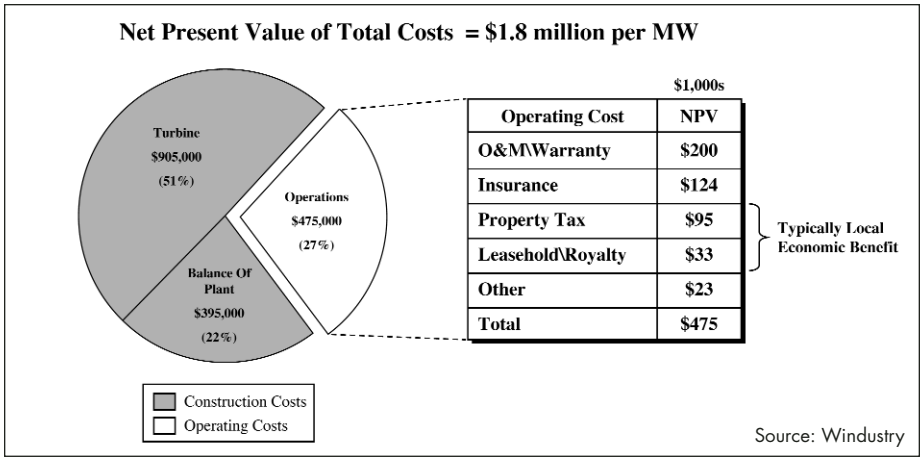
With notable exceptions like Illinois and Pennsylvania, most states determine the tax assessment of wind turbines at the state level. In Illinois and Pennsylvania, assessment is conducted at the county level. Both have legacy tax legislation that adds complexity, and neither has a unified property classification system. So, each county (Illinois has 99 counties, Pennsylvania has 66 counties) may interpret the parts of a wind project that are considered taxable somewhat differently.

For example, in Pennsylvania, all counties assess and tax the capitalized value of the land lease. Additionally, in some counties, tax is assessed on the turbine footings, while in others the footings and towers are considered taxable.

In West Virginia, the taxable value of wind generation equipment is assessed at its salvage value (5%). In Minnesota, tax is assessed based on a formula involving the power that is generated. In Wisconsin, tax is assessed based on a formula involving the power that is sold.

In Minnesota, counties collect the tax. In Wisconsin, it is collected by the state and allocated back through a "shared revenue program." In one Wisconsin project, no property tax is paid (that loophole has since been closed). For another project, the local government receives more income via the shared revenue program than the project pays in taxes.

In Wyoming, taxes are assessed at the state level using a combination of asset value, economic income and comparable sales. The assessed value is then passed to the local assessor, and is not publicly disclosed. In South Dakota, a 2003 change in tax law now allows counties to exempt turbines and blades from state tax assessment.



While it is tempting to simply compare tax rates between states, it is equally important to understand differences in existing tax structures and the intent of local tax policy.

Wind project cost structure

Developing a commercial wind project is a capital-intensive process. The cost of capital construction far exceeds the cost of ongoing operations and maintenance (O&M).

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Commercial projects are typically between 50 MW and 200 MW in nameplate capacity. Transactional efficiency generally dictates the minimum project size, while marginal increases in economies of scale are diminished at the upper end of this range.

All-in construction costs for large commercial wind projects are currently about $1.3 million/MW nameplate capacity. Annual marginal operating costs require an additional $50,000/MW. Assuming a 10% discount rate, net present value (NPV) for operating costs are approximately $475,000/MW and $1.78 million/MW for the total lifecycle NPV project cost.

That means that capital construction costs represent about 73% of the total project lifecycle cost – with operational activities accounting for the remaining 27%. The major operations cost categories are warranty and repairs, property tax, insurance and lease payments.

Project revenue structure

Some may find it surprising that the bulk of economic value from wind power generation projects is derived from tax credits rather than operational activity (e.g., the sale of electric power). In fact, the NPV of tax credits are more than twice that of operations. As mentioned earlier, new wind projects generally require between 4 cents and 5 cents/kWh to achieve financial feasibility. On average, a new wind turbine will produce power in excess of one third of the time.

As a simplistic example, a turbine with a 38% capacity factor that sells power at a nominal rate of 4.5 cents/kWh will generate gross annual revenues of approximately $150,000/MW nameplate capacity (8,760 x 0.38 x 45).

Over 20 years, the NPV of operational revenues from power sales (less O&M costs and debt service) will amount to less than 30% of the project's total economic value. The remaining 70%+ is split fairly evenly

between two sources of tax credits: the production tax credit and accelerated depreciation. These tax credits are realized over five- and 10-year horizons, respectively, and require an offsetting tax liability to capture the credits, an aspect that limits participation in project ownership to some degree.

Local economic benefits

Local economic benefits for most commercial wind projects are derived from two sources: landowner lease payments and property tax revenues. Other economic benefits do exist, but apart from the relatively rapid period of project construction, wind generation is not particularly labor-intensive and many turbine manufacturers source the bulk of components abroad.

The contract terms of landowner agreements are closely guarded by most developers. However, the "going rate" is generally estimated to be $2,500 to $3,500/MW of nameplate capacity. Contracts terms vary, but most are based on some type of minimum guaranteed payment, with or without escalation, a percentage of the gross revenue (with or without escalation) or some combination of the two.

Property tax payments vary widely and range from $1,400 and $11,000/MW of nameplate capacity, with a nationwide weighted average estimated to be $6,400/MW.

Using an average landowner lease payment of $3,000/MW nameplate, leaseholds represent approximately 1.6% of the total NPV for a commercial wind project. Assuming $6,400/MW as the estimated average property tax payment constitutes a further 3.5% of total project NPV or 5.1% for tax and leaseholds combined. In 2005, when 2,431 MW of new capacity was added, direct payments for property tax and leasehold contributed a total NPV of more than $220 million to local economies. NWP

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