Oklahoma Wind Power Initiative

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WIND DEVELOPMENT POLICIES
Options for Promoting Wind Energy Development in Oklahoma

The Oklahoma Wind Power Initiative has produced a series of briefing papers summarizing various policy options available to promote the development of wind energy in Oklahoma. No single policy or set of policies is likely to optimize wind energy development. The key to success is finding the appropriate mix of policies that stimulate a market for renewable energy and provide assistance with capital or production costs.

The following summarizes policy options discussed in the individual briefing papers and then puts these options in the context of issues important to Oklahoma.

Policy Options

a) Creating New Markets: Designed to create guaranteed markets for renewable energy, principally from large wind facilities. Guaranteed markets reduce uncertainty, making investments more attractive. Options include:

- Government purchase requirements – requires some percentage of a government's energy usage to come from renewable sources. The U.S. government is one of the largest consumers of energy.
- Renewables Portfolio Standards (RPS) – mandates that retail suppliers will produce some fixed percentage of their energy from renewable resources; a common feature of many utility deregulation bills and a key driver in the success of Texas' wind energy program.
- Consumption tax credits – incentives for individuals to choose "green energy" by providing a tax rebate on the basis of energy consumed from renewable resources; requires reporting by suppliers and free choice of providers.
- Auctioned contracts – requests-for-proposals of renewable energy sources as part of the state's energy mix; requires some source of funding to pay bid price differentials.
- Performance-based ratemaking – targeted incentives, price caps, or revenue caps which provide incentives (or penalties) for meeting (or failing to meet) renewable energy goals.

b) Tax Incentives: Through tax incentives, capital start-up and/or production costs are reduced, making the per-unit cost of renewable energy more competitive. Options include:

- Production Tax Credits (PTCs) – a tax deduction for per-kilowatt-hour renewable energy produced; the federal government presently offers a 1.8-cent per kilowatt-hour credit (adjusted for inflation), and Oklahoma instituted a production tax credit as part of Senate Bill 440 in the 2001 legislative session. The drawback to state level PTCs is that producers or investors must have a sufficiently large in-state tax burden to qualify and that some incentives may offset the federal tax credit.

- Investment tax credits – a tax credit for capital expenditures on qualifying renewable energy facilities; most commonly applied to small systems such as individual wind turbines.
- Sales tax reductions – exempts purchases related to acquisition of materials for installation of qualifying facilities; may undermine important local revenue sources.
- Property tax reductions – an incentive used to lure investors, however they may undermine local community support. Property taxes are a key benefit from development of renewable energy facilities, potentially returning millions of dollars to state coffers.
- Accelerated depreciation – renewable energy facilities already qualify for a 5-year life under federal legislation.

c) Cash Incentives: Cash incentives operate similarly to tax incentives but eliminate the problems of producer's insufficient tax liability. Primary concerns with cash incentives are establishing a sufficient revenue source to make incentives stable over time. These will typically favor small investors who have difficulty-obtaining financing. Cash incentives include:

- Production incentives – price-support payments; a rebate of a certain amount per kilowatt-hour of energy produced. Production incentives are not likely to offset the federal PTC.
- Grants – help reduce up-front capital costs; could be tied to performance measures.

d) Low-Cost Capital: Rather than providing payments to producers or investors, low-cost capital programs act to provide secure financing for projects. Low-cost capital approaches tend to work with the marketplace to reduce uncertainty and risk, thereby resulting in lower interest rates. Mechanisms include:

- Government-subsidized loans – reduces market interest rates to compensate for "unknown" nature of renewable energy demand. Loans could be financed with mechanisms such as "green bonds".
- Project loan guarantees – reduces risk among lenders, which will reduce market interest rates to developers.
- Project aggregation - spreads risk among several projects.

e) Distributed Resources: Most of the options presented so far deal with securing large wind energy facilities. Distributed resource policies are aimed at spurring development of small projects and sustainable energy usage. Policies include:

- Net metering – individuals who have local power sources can "spin the meter backwards" when excess energy is generated (e.g., on a windy day). Net metering, which exists in Oklahoma, is viewed as a burden by utilities because utilities cannot control the timing or availability of the energy provided. In other states, utilities are required to purchase excess generation at avoided cost.
- Standard contracts – guaranteed long-term power-purchase agreements for small suppliers.
- Site prospecting and permitting – assistance in targeting areas for development and streamlining licensing procedures to encourage small generation facilities.
- Easements – guaranteeing long-term exposure necessary for power supplies, such as wind or solar.

In addition to these policies, the removal of the subsidies for power line extensions will also help encourage development of sustainable energy sources.

f) Customer Choice Opportunities: Customer choice offers people an option to buy electricity from renewable energy resources. Options include:

- Utility-supplied green pricing – customers may purchase renewable energy sources for fees ranging from $2.50 to $10.00 per month extra. This policy requires government oversight to assure validity of charges.
- Green marketing – contracts between generators and retailers, perhaps with state subsidies.
- Aggregated consumer purchases – pooling individuals to larger blocks allows long-term contracts with renewable-energy providers; examples may include cities or county governments.
- Fuel source disclosure – any marketing claim needs documentation to justify that the source of energy production is indeed "green".

Even though a sizeable percentage of people indicate an interest in using renewable energy, experience indicates that not all opt for renewable energy if a monthly surcharge is required.

g) Environmental Regulations: Environmental regulations either impose costs upon energy producers for pollution or limit the pollution that can be produced as a byproduct of fossil fuel use. Regulations include:

- Externality valuation – "adders" to bid prices that reflect societal costs, such as costs of pollution-prevention activities; adders are often set below actual costs and have little impact upon decisions made during bid process.
- Environmental dispatch – ranking fuel sources by cost, with appropriate environmental adders; requires draw from a common power pool.
- Emissions taxes – taxes based upon pollution produced rather than including in bid prices and contracts; funds generated can be used for other renewable or clean-fuels incentives.
- Emissions caps – limits to the amount of pollutants in an area, typically gradually decreasing over time.

Externality valuation, environmental dispatch, and emissions taxes are all means to impose additional costs on fossil fuels. Emissions caps have been used successfully by the EPA since the early 1990s, and have been innovatively coupled with a market system of credits to reduce compliance costs. These mechanisms must be coordinated in a larger setting, because imposing costs within Oklahoma alone could put companies at a disadvantage in a de-regulated market.

Oklahoma Issues

Critical features of developing a significant wind energy presence in Oklahoma include the development of a market, the means of getting energy to that market, incentives to reduce costs of development, and assistance in providing information to those involved in the process.

Market: Of the options described above, Renewables Portfolio Standard (RPS) is the most frequently cited. Texas is the leading example, with 1,000 MW of facilities installed in just over two years since their RPS was instituted in 1999. It is expected that they will meet the 2000 MW requirement well ahead of the 2009 deadline. An RPS typically places a mandate upon energy providers in the state to purchase a certain percentage of their energy from renewable sources. Therefore, it guarantees developers a market, but does not guarantee that utilities will be able to recoup costs if renewable energy sources are priced higher than conventional sources.

Consideration may be given to other mechanisms such as government purchases and consumption tax credits. Government purchases guarantee a buyer, which will likely lessen concerns among utilities about an RPS. Plus, government purchases, given the present cost of wind energy, will likely have little impact upon costs when compared to present energy consumption costs. Consumption tax credits also encourage buyers, but it comes with some uncertainty as to whether a sufficient number of people will opt for renewable energy sources. Consumption tax credits may also reduce revenues to the state.

Transmission. Some of the prime areas for development of wind farms are inaccessible to sufficient capacity transmission lines. The Electric Advisory Task Force set transmission as the primary focus for their efforts. The task force should examine the needs of transmission facilities to wind rich areas of Oklahoma in order to fully tap the available wind resources.

Incentives. With the federal production tax credits in place, costs of wind energy have become comparable to those of fossil fuels. Additional tax credits or incentives aimed at attracting large wind facilities may not be necessary. If a market exists in Oklahoma or the region, and sufficient transmission is available to reach those markets, developers will most likely come regardless of state incentives. Incentives may be more important for small systems, which do not enjoy the economies-of-scale of the large wind farms. For example, incentives could be developed to promote "sustainable communities", where a portion of development and/or production costs may be subsidized for power generated and consumed locally, such as in a city or county.

Information. Developers realize the potential of wind energy in Oklahoma, which ranks eighth nationally as an energy source. However, local communities and individuals may not know what to expect when dealing with developers. Information aimed at negotiating fair lease deals, encouraging economic development coalitions to pursue developers, and refined mapping technology to target those areas best suited for development is needed to assist local communities. Wind resource mapping can be a critical component in assessing viability of smaller projects, especially if incentives are aimed at sustainable communities; this assures that state resources are not expended on projects with little potential return.

As Oklahoma considers the effects of utility deregulation, it is important to consider the development of a wind energy industry within the context of other fuel sources. Incentives designed to lower capital or production costs and create markets may not be sufficient to overcome momentum behind more traditional forms of energy production. Integrating markets within the context of emissions caps and diversified portfolios will work toward the benefit of both sources of power production. For example, wind and natural gas – two prime energy sources in Oklahoma – can work in tandem, with natural gas facilities supplying power at times when the wind is not sufficient to generate much electricity. The greatest challenge is to maximize incentives without either creating a tremendous cost for the state or offsetting federal subsidies.

Information regarding the different policy options based on "Strategies for Supporting Wind Energy", by Nancy Rader and Ryan Wiser (1999) for the National Wind Coordinating Committee, available on the web at http://www.nationalwind.org/pubs/strategies/.
For more detailed information about policy options, see OWPI briefs 3a through 3g.