

SITING WIND POWER IN NEW YORK

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**KEY ISSUES IN LOCAL REGULATION
OF
WIND ENERGY DEVELOPMENT**

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As energy costs continue to spiral upwards, utilities and consumers are showing an increasing interest in alternative fuel sources. New York, with some of the highest utility rates in the country, has seen a significant increase in proposed alternative energy facilities, particularly wind power facilities. The burden of regulating the specific proposed facilities falls mainly on local governments. This paper examines several key issues for local regulators to consider in regard to wind, with an emphasis on the large windmill farms that have been proposed for a number of areas in the State.

Background

Wind energy is the world's fastest growing source of energy over the last five years. New York has not been immune from this expansion with new commercial wind projects in operation, and numerous other proposals on the table. New York is considered one of the highest potential wind energy states. The annual wind energy generating potential — 62 billion kilowatts — is more than California or any state east of the Mississippi. Governor Pataki has issued an executive order requiring all state agencies to purchase 10 percent of their energy from renewable energy sources by 2005 and 20 percent by 2010, in an attempt to create a stable long-term market for wind energy.

Wind energy proposals have been furthered by a significant reduction in cost of energy produced in recent years which, coupled with higher cost of electrical energy, have made

wind energy cost competitive. Funding incentives available from the New York State Energy Research and Development Authority (“NYSERDA”) further promoted wind projects in the State. Also driving the increase in wind energy development has been state and federal tax credits, particularly the Federal Production Tax Credit for wind energy.

While virtually all parts of New York State are good potential locations for wind power projects, some of those areas, particularly within the Adirondack and Catskill parks, the possibility of projects actually being located is slim at best. But there is no question that New York provides a fertile environment for large scale wind projects.

The most controversial wind projects are so-called wind farms, where multiple windmills 180 to 250 feet tall are located in large arrays. A wind farm can produce anywhere from five to several hundred megawatts, and consist of from a few to several thousand wind turbines. Wind energy works through the wind turbine, which caps the kinetic energy of the wind and converts it into electricity. The primary components of the turbine are the rotor (*i.e.*, the blade assembly, the electric generator and the tower). The wind spins the wind turbines rotor, turning the generator to produce electricity. Today’s wind facilities are highly technical. Computers control every aspect of the angle of the blades and the turbine itself to capture the maximum potential energy. Facilities also include significant safety factors including emergency shutdown controls. Wind turbines being built today produce as much as 120 times as the amount of the electricity as was produced by early wind power facilities, which has significantly contributed to the cost effectiveness of this energy resource.

In addition to large wind farms, it is possible to install household-sized wind energy facilities in many communities across New York State. These highly-reliable high tech

devices have but three moving parts and therefore very low maintenance costs. Worldwide over 150,000 of the modern small wind turbines have been installed. A key point for local governments is not to preclude small facilities over concerns about large wind farms.

Wind Farm Issues

For the most part the attention in New York has been directed towards the permitting of large wind farms in various areas of the state. Aesthetic and other environmental concerns have been raised, along with fears of decreased property values in the immediate area of projects. Few zoning codes currently address these projects, and, many of the target communities do not have zoning.

One mistake the communities cannot make is assuming that if their zoning codes do not allow for wind farms they are prohibited within the community. Because wind farms are utilities, any request for a use variance in the case of the unavailability of properly zoned land, is likely to be judged by the reduced standard for utilities established by the Court of Appeals in *Matter of Consolidated Edison v. Hoffman*.¹ The answer is not exactly clear whether *Hoffman* always applies because it refers to essential public facilities, and wind farms do not necessarily have to be in any particular Town. But *Hoffman* does apply to all public utilities including new facilities, if the applicant can make the requisite showing of public need.²

¹ 43 N.Y.2d 598, 403 N.Y.S.2d 193 (1978).

² *Cellular Telephone v. Rosenberg*, 82 N.Y.2d 364, 372, 604 N.Y.S.2d 895, 899 (1993).

Accordingly, as with other potentially controversial projects, communities are benefited by adopting codes that address issues before they arise. If a code does not address a wind power farm, communities can consider utilizing the moratorium tool to gain time to deal with proposed projects.

Wind power projects usually raise issues of land use compatibility, noise, impact on birds and other biological resources, aesthetics, and other socio economic concerns. As with any large project, communities can evaluate all these impacts as part of its obligations under the State Environmental Quality Review Act (“SEQRA”). Approval of virtually any type of wind farm will be an action under SEQRA, unless the community specifically allows wind farms as an as-a-right use and requires neither site plans nor any other discretionary permit — a highly unlikely combination.

The first issue is where is the most appropriate place in the community to allow wind power facilities. Because of the nature of the facility, developers are likely to seek out ridge areas. In many communities these ridge areas are also highly suitable for upscale housing, or present significant aesthetic resources to the community. Thus by their very nature wind farms raise land use compatibility issues. In many communities the Comprehensive Plan will not resolve these conflicts, as both preservation of aesthetic resources and enhancement of the economy are goals of the Plan.

Thus, most common placement of wind power is in agricultural zones. Wind power and farming uses are highly compatible. Beyond providing increased revenue to the landowner, wind farm activities do not disturb agricultural activities, can be placed in the large

open spaces that constitute farms, and can be compatible with other land uses within the community.

Land use controls which should be placed upon development of wind farms include requiring site plans and setbacks. Communities often overlook setback requirements when dealing with tall structures. Having an adequate fall zone, insuring that there is adequate setback from residential structures, property lines, and roads, is an appropriate way to frame a wind farm. As with all other sites of enactments, setback requirements must be based on a reasonable basis to be upheld. Accordingly, setbacks of over 500 feet start to raise an issue of reasonableness, unless it can be shown why such a significant space is required. One community has created a setback of 1,500 feet from the nearest residential structure, most are 1,000 to 1,500. It should be noted that if this setback cannot be met, then, as with use variances, the standard for area variances for public utilities must be employed in evaluating variance requests.

Site plan approval should be a minimum requirement for any wind power generating facility. Site plans should indicate the proposed size and location of each turbine, as well as supporting facilities and roads. The impact of the facilities should be minimized by requiring all utilities to be placed underground. Landscaping requirements can also be included, but given the size of wind turbines, no community should assume that landscaping is going to significantly reduce visibility of the facility (indeed, if there were significant trees blocking the view the site would hardly be likely to be successful as a wind farm). Rather, the goal of landscaping is to reduce visibility of service facilities.

Special use permits are also common for wind power facilities. Special use permits alone are limited a power, given that the law in New York is that a recognition of a use

as a special use is tantamount to legislative approval of that particular use. Only if the particular use allowed in a district is not appropriate in a particular part of that district for legitimate public safety and welfare reasons can a special use permit be turned down, particularly for a utility installation. Accordingly, special use permits should be used in conjunction with other permits rather than as the sole discretionary approval device.

Some communities have adopted as part of their laws some individual land use limitations that are worth considering. For example:

1. Local laws should state that no individual tower can be installed in any location along the major access of an existing microwave communications link where its operation is likely to produce electromagnetic interference in the links operation.

2. The law should prohibit towers in any area where it is likely to cause interference with broadcast, retransmission, or reception antennas for radio, television or wireless communication facilities.

3. Many laws recognize that the size of wind farm facilities are such that aviation safety lighting will probably be required by the Federal Aviation Administration. Communities will often limit lighting to the minimum required by the FAA in order to reduce potential light pollution and other aesthetic effects on nearby residential neighborhoods.

4. A local law should include a provision that wind turbines must include an automatic breaking, governing or feathering system to prevent uncontrolled rotation, over speeding and excessive pressure on the tower structure, rotor blades and turbine components. No modern facility should have problems meeting this requirement.

5. In addition to the height concerns that towers raise, there is also safety concerns related to the rotors themselves. Accordingly, a common feature of local laws is to mandate a minimum distance between the ground and any part of the rotor blade system of at least 30 feet.

6. Some codes require that the wind farm owner provide an insurance policy naming the town as an additional insured should there be a failure of the towers. This is also a common feature in telecommunications regulatory laws. This author highly doubts that such requirements are legal, unless the property is located on town land or otherwise uses town right-of-way. Absent such a public location the town does not have an insurable interest in the facility, and simply permitting a facility does not create liability to the town for its failure.

7. Setbacks should be based on both distance and minimum noise levels.

8. Local laws should require decommissioning plans, as part of the SEQRA obligation to mitigate to the maximum extent practicable.

One of the more interesting concerns that has arisen with wind farms is the potential impact on bird populations. The concern arises out of the study at one of the largest wind farms in America at Altamont, California, which showed that the generating facilities had an unexpectedly high impact on raptors, including some of the most endangered avian species.

No one is exactly sure how many birds are killed each year by colliding with manmade structures, the estimates range from 100 million to one billion per year according to a wind energy facility handbook put out by the National Wind Coordinating Committee. This report also states that a study performed by West, Inc. estimated that the 15,000 operating wind

turbines in the United States would be responsible for 33,000 bird fatalities per year for all species. Comparatively, cats are estimated to kill an estimated 100 million birds per year. Wind turbines have also raised concern because of collisions with bats, but there are no studies showing impacts.

Experience seems to show that those who are raising the issue of avian collisions are mostly those who are concerned with having wind farms in their area and for aesthetic and alleged property value decrease purposes oppose the facilities, but seek a more environmentally based reason for the opposition. While potential avian fatalities are unlikely to be a legitimate reason to deny wind farm permits, they may make certain areas, such as proximity to wildlife refuges or endangered species breeding areas, unsuitable for the facilities.

Wind farm projects themselves rarely represent loss of habitat or similar construction impacts because they affect a relatively small proportion of the land they occupy. Given that ridge lines are often the location for wind project construction, municipalities should be alert to potential drainage impacts and excess vegetation loss. These again can be addressed in a normal site plan process.

By far the most controversial aspect of wind farms is the visual or aesthetic resources potentially damaged by these large towers. The significant questions are whether the new wind farm will substantially alter the project setting (known as a “viewshed.”), are these viewsheds identified as specifically important to the community (*i.e.*, such as blocking views of major landmarks), and will the chosen location comply with local goals and policies related to visual quality?

The impact wind projects have will depend on the size of the project and the manner in which it is laid out. Keeping service roads, particularly those on slopes, to minimums, landscaping service buildings, and minimizing markings on towers, limit the impact on the view shed. Of course, to build a wind farm requires multiple towers, and effective use of wind resources requires adequate spacing between individual turbines as well as between rows of turbines. Spacing of wind turbines is determined by the distance needed by winds to replenish. Turbines of shorter blades can be placed much closer together than larger turbines. Increases in efficiency in turbines have reduced the number of turbines to produce the same amount of power, and fewer-wider spaced turbines can present a more pleasing appearance than the tightly packed arrays that were the signature of earlier wind farms.

In evaluating visual aspects, communities can require visual simulations to determine the visual impact within the viewshed. Communities also need to consider that compliance with FAA lighting requirements will increase or decrease depending on proximity to airports or flight paths.

Closely aligning with concern over visual impacts is the potential impact on property values. It has been suggested that a reduction in the visual aesthetics of a site will reduce property values for neighboring properties. But for studies conducted so far on wind farms, the indications are that no properties were negatively impacted by their presence. But where an important viewshed may be disrupted, such as a view of mountains or a lake, area-specific appraisals can be required. Objections are especially likely to come from owners of new homes who were attracted to an area as rural character, or will have a significantly valuable view

shed interrupted by the wind turbine array. Thus, areas where farm land is turning into new subdivisions may be less willing to host wind farms.

Not surprisingly then, most wind farms are currently located on farms and other locations where obtaining a living from the land is the norm. Setback ordinances can help in this regard, as long as they are reasonable. Setback ordinances should at least require a fall zone equal to the height of the tower, including the extended rotor blade.

One of the concerns that nearby residents raise is noise. Noise is always an issue with large scale facilities, but as wind turbines have become more efficient they have also become significantly quieter. Some communities have passed ordinances requiring the turbines operate at no greater than 50 dB per individual tower, measured at the nearest residence. Most modern turbines can comply with this standard. Use of setbacks decreases the impacts of operating noise produced by wind farms. Of course one of the typical aspects of a wind farm is that it is located in a rural or remote area and thus the area has low ambient noise levels. Given that such areas are inherently windy — otherwise they would not have been chosen -- it is quite possible that the background noise generated by the wind is sufficient to mask the sounds of the wind farm itself even for individuals located close enough to otherwise hear the facility. One study found that modern turbines generate primarily broad-bound sound levels no higher than those of a moderately quiet room at distances of 750 to 1,000 feet. Of course, during development their would be constructed-related noise, as their would be would be with any project.

In addition to using setbacks to control noise, some communities set up a complaint and investigation process. This is especially easy to do if a host community agreement is established.

There are obvious benefits to wind power in regard to the saving of energy by use of free renewable fuels such as the wind. But there are also significant potential gains to the community to be made through lease payments to private individuals, creation of jobs, and property tax or PILOT payments. Unless communities opt out, wind energy facilities are generally property tax exempt for 15 years. But the ability to opt out creates in the community a power to require a host community agreement. In other words to avoid paying property taxes, the applicant does not want each taxing jurisdiction — the county, community, or school district -- to opt out of the property tax exemption. Accordingly, host community agreements are quite common whereby communities receive payments in lieu of taxes.

CONCLUSION

New York has an opportunity to generate a significant portion of its energy capacity needs through the use of wind power. Wind power is close to financially competing with fossil fuel sources and provide significant environmental benefits. Towns can promote the furtherance of green power by accommodating these uses in their zoning codes, while taking steps to mitigate potential harms. Properly situated, wind farms can produce not only environmental benefits but also economic benefits to the community in the form of tax or payment in lieu of tax payments.