Siting Guidelines for Windpower Projects in Kansas

The Kansas Renewable Energy Working Group
Environmental and Siting Committee

Introduction

The Environmental and Siting Committee of the Kansas Renewable Energy Working Group (KREWG) has drafted these guidelines for use by windpower project stakeholders as they consider potential project sites in the State of Kansas. Wind energy siting and permitting requirements vary from county to county based largely whether or not a county is zoned. Currently, statewide regulations for siting wind projects do not exist.

Much of the material for these guidelines has been taken from the National Wind Coordinating Committee's (NWCC) *Permitting of Wind Energy Facilities* handbook[1]. The NWCC permitting handbook is an excellent resource for the siting process as well as the permitting process. Developers, regulators and other interested stakeholders are strongly encouraged to read the handbook and take its observations and suggestions under consideration.

The concept of siting is differentiated from permitting, as permitting pre-supposes an identified project site. However, the guidelines in this paper incorporate a continuum of activities and concerns that will occur during both the siting and permitting processes. It is not anticipated that all of the proposed guideline activities will occur exclusively in the siting process. The process of successfully siting a wind energy project often comes down to a matter of trade-offs between community acceptability and economic viability. This is the nature of a healthy interactive and reciprocal engagement and discussion.

NWCC identifies ten discrete categories or areas of consideration in the permitting process. Of these ten categories, eight are directly applicable to the siting process. Additionally, individual guidelines within these eight categories have been added or tailored to address a number of concerns and issues specific to the State of Kansas.

There are various regions of Kansas that have wind resources sufficient to support the currently required economics of wind energy development, including but not limited to the Flint Hills region of eastern Kansas and south central and western Kansas. Additional areas may be identified by ongoing studies or added as improvements in technology or transmission systems are made.

Because of the State's many suitable qualities for wind energy generation, these regions are currently experiencing a high level of interest in wind energy projects. Local regulators should anticipate that wind energy projects may be proposed in their area and address their preparedness to evaluate any projects proposed. Developers should anticipate the possibility of a saturation of proposed projects and assess whether the expense of a wind resource assessment is justified. All interested stakeholders should educate themselves on the facts of wind energy generation.

[1] The handbook can be found online at www.nationalwind.org/pubs/permit/permitting.htm.

Based on the discussions and conversations that have transpired in the Environmental and Siting Committee, wind energy issues in Kansas are similar to those in other states. Residents and other stakeholders feel protective of their local resources and environment, and are concerned that those resources not be exploited or degraded. Developers see an opportunity to establish new renewable energy generation facilities and may be surprised and/or defensive when their proposals are opposed by individuals citing concerns over the project's impact on the environment.

A critical element of a responsible approach to siting of windpower projects in Kansas is the recognition that projects must be evaluated and developed on their individual merits and on reasonably expected positive and negative impacts, collectively. Cumulative positive and negative impacts will undoubtedly accrue as development proceeds within regions and the State. It is reasonable to expect that these cumulative effects may differ both in type and in significance from those experienced at individual project sites. Cumulative effects on natural and biological resources, in particular, require consideration, but those in many other categories are also important. In the interest of long-term development and sustainability of the industry in a manner that considers the needs of all stakeholders, the context of the collective merits of projects should be evaluated.

There are numerous informational resources available to stakeholders in the wind energy siting process, many of which are readily available on the Internet. We have included a resource listing as Appendix A to this guidelines document in order to facilitate research and discovery by all parties. The listing is by no means comprehensive and inclusion, and the listing does not imply endorsement of the particular resources or the views they represent by the KREWG. Appendix A is intended to be a dynamic document that will hopefully be updated on a regular basis as resources evolve.

The principles outlined in this paper are neither mandates nor regulations. The goal of these guidelines is to encourage developers to select potential wind sites using a process that is acceptable to all stakeholders, to protect the State's natural beauty, to minimize deleterious effects to wildlife, to reduce suspicions, to facilitate the education and understanding of all those involved in the process, and to promote a responsible approach to the siting of windpower projects in Kansas.

1. Land Use Guidelines

a. Contact agencies, property-owners and other stakeholders early in the process to identify potentially sensitive land uses and issues;

b. Learn the rules that govern where and how a wind project may be developed in the project area;

c. Review and address land use compatibility issues before leasing the land;

d. In the spirit of interacting with all landowners in an equitable and fair fashion when proposing lease and option agreements, provide access or direction to objective background information that will allow the landowner to make a fully informed decision;

e. Recognize there are concerns specific to each region in the State. Consult with appropriate experts, and research and evaluate the implications of local issues prior to selecting a specific site within the respective region;

f. Because of the rarity and high conservation value of the tallgrass prairie it harbors, careful consideration should be given to the impact of windpower projects in the Flint Hills[2], particularly in the relatively unfragmented areas of the landscape[3]. In addition, care should be given to avoid damage to unfragmented landscapes and high quality remnants in the Sandsage, Mixed Grass, and Shortgrass prairies in central and western Kansas. When feasible, wind energy development should be located on already altered landscapes, such as extensively cultivated land and/or areas already developed. An undeveloped buffer adjacent to intact prairies is also desirable; and,

g. Plan for efficient use of the land, consolidate necessary infrastructure requirements wherever possible, and carefully evaluate current transmission and market access.

2. Noise Management Guidelines

a. When evaluating prospective sites, consider whether there are adequate setbacks from residential areas and rural homes, especially where the residential unit is in a relatively less windy or quieter location than the turbines. Recognize that residents who support the wind system may some day be replaced by others who will object to the noise; and,

b. Where acoustic levels are critical because of nearby residences and/or natural surroundings, investigate the possibility of using sound reduction technology on appropriate turbines.

3. Natural and Biological Resources Guidelines

a. Consider the biological setting early in the project evaluation and planning process. Use biological and environmental experts to conduct preliminary reconnaissance of the prospective site area. Communication with wildlife agency and university personnel is essential. If a site has a large potential for biological and/or environmental conflicts, it may not be worth the time and cost of conducting detailed wind resource evaluation work;

b. Contact appropriate resource management agencies early in the planning process to determine if there are any resources of special concern in the area under consideration;

c. Involve local environmental/natural resources groups as soon as practicable. They will be less likely to react negatively to a project if they understand its requirements and see their concerns are being seriously addressed;

d. A key tool for avoiding unnecessary negative ecological impacts of wind power development is planning. Landscape-level examinations of key wildlife habitats,

---

[2] Tallgrass Prairie is the most altered ecosystem in North American in terms of the number of acres lost, with only 3 to 5% remaining in any form. The Flint Hills landscape is the last expanse of tallgrass prairie, and contains approximately two-thirds of all the remaining tallgrass prairie in North America.

[3] See Appendix A under Web links.

migration corridors, staging/concentration areas, and breeding and brood-rearing areas should be used to develop general siting strategies;

e. Legally protected wildlife, such as threatened and endangered species, present or potentially present at a site should receive careful review. Recognize that other seriously declining or vulnerable species that have no legal protection may also be present. Research wildlife issues at each site and attempt to understand how a wind energy project might impact individual species of concern;

f. Sites where native vegetation is scarce or absent will have substantially fewer biological resource concerns. Where possible, avoid large, intact areas of native vegetation;

g. Power lines should be buried when feasible. In regions where grassland burning is practiced, infrastructure should be able to withstand periodic burning of vegetation. Roads and fences should be minimized;

h. No perches should be allowed on the nacelles of turbines. Towers should not utilize lattice-type construction or other designs that provide perches for avian predators. Potential adverse affects of turbine warning lights on migrating birds should be addressed;

i. Turbines should be situated in a way that does not interfere with important wildlife movement corridors and staging areas;

j. When it is impossible to avoid significant ecological damage in the siting of a wind power facility, mitigation for habitat loss should be considered. Appropriate actions may include ecological restoration, long-term management agreements, and conservation easements to enhance or protect sites with similar or higher ecological quality to that of the developed site; and,

k. Consider potential cumulative regional impacts from multiple wind energy projects when making environmental assessments and mitigation decisions. Failure to consider multiple projects will prevent analysis at a scale that could potentially yield a much different picture.

4. Visual Impact Guidelines

a. The visual impact of windpower projects[4] is an important consideration in siting deliberations. The impact on the quality of the surrounding landscape and viewsheds, especially in areas with high aesthetic qualities and where neighbors' property may be impacted by the siting, should be evaluated fully. Accurate visual representations of potential projects (including visual simulations and viewshed analyses) are useful ways of providing information to landowners, the general public and other key stakeholders regarding the visual impact of windpower projects;

b. Listen to the community(ies) and stakeholders in all project phases;

[4] The visual impact of wind turbines is subjective, in that there are a wide variety of views on the aesthetics of wind turbines, and those views are influenced by the site and surrounding landscape, land use practices, public attitudes, and individual perspectives.

c. Consider adapting the project design to minimize visual exposure from visually sensitive areas;

d. Plan the project to minimize the need for developed roads or cut-and-fill (refer to 5d);

e. Consider the possibilities and benefits of using road-less project designs or designs that rely on existing roads; and,

f. Identify designated scenic byways[5] and popular vistas, and avoid sites that are readily visible from those points.

5. Soil Erosion and Water Quality

a. Wherever possible, avoid sites that require construction activities on steep slopes;

b. In considering the appropriate erosion control measures required for a specific site, be aware that although some measures may require greater expense initially, significant savings will occur over the life of the project in reduced maintenance and replacement costs. A well-developed erosion and sediment control plan may also reduce regulatory delays in approving and monitoring the project;

c. Ideally, construction and maintenance should be done when the ground is frozen or when soils are dry and the native vegetation is dormant;

d. Improved roads and construction staging areas should be kept to a minimum, and care should be given to avoid sensitive habitats;

e. Ongoing operation and maintenance activities should be carried out as practical by use of light conveyances to minimize habitat disturbance and the need for improved roads; and,

f. Native vegetation of local ecotypes should be used when reseeding disturbed areas. Wildlife and plant composition should be considered in determining the frequency and timing of mowing near turbines.

6. Safety Guidelines

a. Include the need for safety setbacks when evaluating specific parcels for development. Sufficient spacing from public access ways, and particularly from residential areas and structures, can mitigate many siting issues.

7. Cultural, Archaeological and Paleontological Guidelines

a. Avoid selecting sites with potentially sensitive cultural or historical resources whenever possible, and always involve stakeholders early on;

b. Consult with the Kansas State Historical Society and qualified professional specialists familiar with cultural and fossil resources in the project development area;

---

[5] Kansas scenic byways are designated by the State through a grassroots nomination/evaluation process that focuses on the high visual aesthetic qualities of the route. Windpower projects should be sited to minimize adverse impacts on the visual quality of scenic byways as well as on the visual experiences of other popular vistas and scenic areas. In general, priority should be given to windpower projects where the natural landscape has already experienced significant change from human activity.

c. Some sensitive resources and sites may be confidential to Native Americans. Respect this confidentiality and plan to work closely with tribal representatives to avoid disruption of these resources;

d. Design project site layouts to avoid sensitive resources if possible;

e. Provide for monitoring and mitigation for protection of sensitive resources during construction and operation of the project; and,

f. Allow adequate time in the project schedule for data and specimen recovery, mapping analysis and reporting.

8. Socioeconomic, Public Service and Infrastructure Guidelines

a. Consult with the local agencies and service districts to determine if and how the project's requirements may affect community services, costs and infrastructure;

b. If possible, plan the project's operation and construction to avoid or minimize potential impacts on community services and infrastructure;

c. Recognize that the Kansas personal property tax exemption available to renewable energy projects affects the local community. Developers are encouraged to incorporate community and goodwill initiatives into the project's economic plan and work to be good neighbors;

d. Do not exploit the fact that some districts or counties do not yet have an established zoning permitting process applicable to wind energy projects. Work with the appropriate local officials to establish reasonable parameters and make the process as transparent and informative to the public as practicable;

e. Provide information related to possible future project expansions. Affected stakeholders should recognize that developers may not have precise information about future expansions, and developers should recognize that stakeholder issues and concerns may be dependant on project scale, and that expanded projects may involve impacts not specifically addressed during the initial project;

f. Anticipate and make provisions for future site decommissioning and restoration;

g. Utilize local contractors and providers for services, supplies, and equipment as much as possible during construction and operation of the project; and,

h. Recognize that the local community may not have a specific need for the electricity generated by the proposed project. There should be substantive public benefits beyond the greater good of hosting a renewable energy facility.

9. Public Interaction Guidelines

a. Prepare and implement a public outreach program on the benefits and trade-offs involved in wind generation; and,

b. Provide access or direction to objective background resources that will allow the interested parties to make fully informed decisions. Decision making by developers, landowners, elected officials and the general public will be enhanced when accurate and comprehensive information is shared and ample opportunity for two-way communication is available. Public involvement through meetings and public forums should be incorporated into the siting process.