



Siting Issues for Wind Power Plants

Permits and approvals for construction and operation of a wind energy project are similar to those for other energy projects.

Even though a wind energy project is considered an innovative use of a renewable resource with environmental and economic benefits for a local community, a trouble-free siting process cannot be guaranteed. The necessary permits and approvals for construction and operation are similar to any other major energy project. Public safety, land use and environmental concerns must be properly resolved, often within a variety of federal, state and local jurisdictions. This brief report reviews issues that arise in siting wind power plants and describes some of the key elements of a sensible siting review process.

Siting power plants and transmission lines has grown increasingly difficult because society has become more sensitive to the potential effects of projects on the environment and surrounding communities. During recent years, siting regulations and laws have become increasingly complex, requiring extensive study and review and provisions for public involvement.

Similar to other energy projects, the siting of wind power plants must include an examination of external effects, including traffic congestion during construction and environmental protection. Wind projects also present some unique siting challenges, including the following:

- **Visual and noise impacts in scenic areas or near residential communities.** Wind turbines are highly visible structures that generate noise and often are located in conspicuous settings.
- **Potential impacts on birds and other wildlife.** Wind turbines can pose a threat to the environment and wildlife. Studies may be required to devise strategies for mitigating negative impacts on birds, soil erosion and wildlife habitats.
- **Land owners' rights.** Wind power plants often pay substantial rents and royalties to land Owners, but the rights of neighboring land owners also must be considered
- **Staged development.** Wind projects have the advantageous option of multiple stage construction; however, this also complicates siting proceedings and poses economic complexities.

It is in both the developer's and the public's interest to address all legitimate siting issues in an open and unbiased process, while minimizing costs for participants and delays in decision making.

Understanding the roles and interests of various stakeholders is essential.

Who is involved?

Many different groups and individuals may be involved in siting a wind power project. Understanding the

differing roles, interests and priorities of various stakeholders is essential. Wind project developers, typically an independent power company or a utility, are interested in winning approval for the project as quickly and as cheaply as possible. Depending upon the location, state, local and federal governments may play a role in siting activities. A state land commission or environmental quality board, a local zoning board or a federal agency each may have different compliance regulations that must be met before construction of a wind project can begin.

Community and environmental groups frequently participate in the siting process.

Community groups, environmental groups and activists frequently participate in the siting process. Their views often carry considerable weight with state and local officials. These groups are interested in the jobs, tax revenues, wind turbine noise, visual impacts, soil erosion, wildlife protection and other environmental issues that may accompany wind plant siting. The general public also influences siting procedures by swaying views of central participants.

Negotiations between the participants determine whether a project will be allowed to proceed and under what conditions. The objective is to strike a balance between competing issues and concerns. Government entities will determine goals, schedules, procedures and decision criteria to guide the siting process.

Guidelines for wind facility siting

To avoid opposition and litigation in later development stages, the process should include significant and early public involvement. The public, and particularly residents living near a project, should be aware of the application and be allowed to comment on the government agency's draft and final decisions. To address concerns of the wind developer, reasonable time frames should be established for site application review, public hearings and final decisions. This includes adequate time for public notification and stakeholder preparation.

The siting agency should establish in advance the criteria to be used in making its decisions. This includes outlining the factors to be considered, how the factors will be weighed against each other and minimum requirements the project must meet. Allowing developers to obtain all the necessary permits from one government agency, or otherwise coordinating government processes, will prevent duplication and delay. In the case of a court challenge, agencies should strive for reasonable and timely judicial review. Finally, it may be useful for a siting agency to define geographic areas that are acceptable for wind projects.

Many developer and stakeholder questions can be answered in advance if states and communities develop laws, ordinances and regulations for siting wind projects. Local governments may wish to implement zoning amendments for wind plants. Standards can be developed for wind turbine size, installation and design, siting, nuisance concerns and other regulations, often with the guidance of similar statutes (e.g. those that govern radio towers) or regulations of other communities.

Environmental impact studies, mitigation and remediation may be required.

Environmental impact studies, mitigation and, potentially, remediation may be required. The problem of birds being killed by wind turbines recently has generated considerable publicity and controversy. The bird issue warrants concern, though most believe it can be properly addressed through advanced consideration of siting procedures.

The National Wind Coordinating Committee is preparing a handbook that will help states and communities address wind siting issues and develop appropriate wind siting review processes.

This brief was summarized by Jeff Dale, National Conference of State Legislatures,

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