

THE LAW OF WIND
—Siting and Permitting Wind Projects—

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Although wind energy projects are commonly praised for producing green power, they rarely receive preferential permitting treatment. Wind energy projects raise local land use, environmental, and community concerns similar to those raised by other commercial and industrial projects. Concerted opposition to large projects by local and nationwide wind opponent groups can cause schedule delays and pro forma impacts so significant as to halt project development. This has sensitized potential project purchasers and financiers, who usually scrutinize permitting and environmental issues very closely.

In this climate, project developers can achieve a significant competitive advantage by doing permitting right: imposing a disciplined focus on site assessment and fatal flaw analysis, “permitability” oriented project design, and strategic consultation with interested agencies, communities, and interest groups.

I. The Permit Process. Wind energy facility siting processes are highly localized. There is enormous variation from state to state and even from location to location. Factors such as the need for transmission lines or access roads, facility size, facility and equipment location, land ownership, and federal involvement may determine the number of agencies and the level of government involvement for a particular project.

A. Federal Siting. Proposed wind projects on federally managed land must secure land rights (typically called “rights-of-way”) and undergo the associated environmental review under the National Environmental Policy Act (“NEPA”) and related statutes. This is particularly relevant in those western states such as Utah and Nevada where much of the land, including much of the prime wind area, is located on federal lands.

B. State Siting. A few states, including Oregon and Minnesota, have state siting councils or boards that have “one-stop” mandatory siting jurisdiction over permits for wind energy facilities exceeding certain sizes. Washington has a siting council that may take jurisdiction over issuing permits for wind energy facilities of any size, but only if requested by the applicant. California has a state siting body that has no jurisdiction over wind energy facilities.

C. Local Siting. In states where projects do not trigger state siting jurisdiction, and in states with no state siting process, wind energy projects are permitted by the local jurisdiction, which, for typical rural wind energy projects, is almost always a county (as opposed to a city governing body). Windy states with no state siting process include Colorado, Idaho, Iowa, Nevada, Texas, and Utah.

D. Comparative Advantages. On average, siting wind energy facilities through a state siting process takes longer than doing so through a local process, as more documentation is typically required at the state level. In Oregon, for instance, the issuance of a site certificate for a wind project may take from 12 to 18 months. However, Oregon now allows for an expedited (nine- to 12-month) review process for wind energy projects that will have up to 300 MW of nameplate capacity. In comparison, siting at the local level can be completed in as little as three to six months if no significant environmental reviews are required and if there is little opposition to siting the project. Despite the longer period of time required for state siting, it offers several advantages over local siting. Generally, these advantages are important for difficult or highly contentious projects, and are less important for straightforward, locally supported projects. First, review and approval tend to be based on more objective criteria and subject to less potential political bias. Second, the process for appealing site approvals can be expedited under state permitting.

There is a commonly held view that it is easier to permit wind energy projects at the local level, but this may not be true for all projects. When the option exists, a decision to pursue a particular permitting route should be made carefully and on a case-by-case basis.

State siting typically requires a higher level of involvement from other state departments such as fish and wildlife, environmental quality, water resources, parks, and cultural resources agencies. State siting is usually far more costly to the applicant due to significantly more complex regulatory barriers, required studies, agency review costs passed on to the applicant, and added processing and review time. In local permitting, such agencies may not even be notified and, if they are, their recommendations often do not carry the force of law.

II. Local Permitting. For local siting applications, an applicant may be required to work with local planning commissions, zoning boards, and county boards. The county governing body, typically a board of commissioners, generally must approve and issue a permit, most commonly a conditional use permit. In most counties throughout the United States, a wind power project is conditionally allowed in rural land use zones—it is not expressly allowed or prohibited, but rather subject to a discretionary review by the appropriate local authority.

To secure a conditional use permit, an applicant must show that the project will be compatible with adjacent land uses (typically farming or ranching). Some counties have developed, or are developing, utility or wind overlay zones that further dictate where and how wind energy projects can be sited. Some counties, including several in Utah and at least one in Washington, have adopted or are considering ridgeline overlay zones that impose certain restrictions on ridgeline construction. Additionally, conditional use ordinances often require review by and consultation with state or federal agencies in the permitting process. For instance, if the project could negatively impact wildlife species listed by state or federal agencies as threatened or endangered, the appropriate state and/or federal agencies will have to be consulted. State and federal wildlife agency review may also occur as a matter of course through the environmental review process. Locally permitted wind energy projects typically require three to six months to be completed, depending on the complexity and level of environmental review required and the presence or absence of project opponents.

In addition to the applicant's securing a conditional use permit, some states require that the local permitting body conduct an environmental review based on state environmental review statutes modeled after NEPA. Washington and California require this review, Washington under its State Environmental Policy Act ("SEPA"), and California under its California Environmental Quality Act ("CEQA"). Though SEPA and CEQA are procedural evaluative tools and do not mandate specified results, the net effect of such statutes is to increase process time, cost, and the probable imposition of additional mitigation requirements. Oregon, Nevada, Wyoming, Utah, New Mexico, and Idaho do not have comprehensive environmental review statutes.

III. Federal Environmental Review. Wind energy projects that require a federal agency to take action or make a decision "enabling" the project trigger NEPA review. NEPA is a procedural statute that requires federal agencies to consider the environmental impacts of a proposed decision before making the decision. In the context of wind energy projects, NEPA can be triggered by the need to acquire a right-of-way or special use permit from the Bureau of Land Management ("BLM"), the U.S. Forest Service ("Forest Service"), or another land-managing federal agency; the need to interconnect with a Bonneville Power Administration ("BPA") or Western Area Power Administration ("WAPA") main transmission line or substation; entering into a power purchase agreement with BPA or WAPA; and the need to secure a Clean Water Act section 404 removal/fill permit from the U.S. Army Corps of Engineers. Depending on the level of review required, the review can take one month (for decisions that have been categorically excluded from individual NEPA review), two to six months

(for an environmental assessment to be prepared that concludes that the federal action will not significantly impact the environment), or more than a year (for an environmental impact statement (“EIS”) that analyzes in much more detail the impacts of projects in areas that are considered to be environmentally sensitive). When a state-level environmental review is already under way for a wind energy project, the federal agency may piggyback on the state process and incorporate the environmental documentation from the state process into the federal NEPA review. In appropriate situations, the federal agency may also “tier” a decision to a prior NEPA review and thereby reduce the amount of time and material that must be prepared for the new decision. An example of this would be BPA’s relying on a prior “programmatic” EIS that evaluated future energy development in the Northwest in order to support a decision as to whether to allow an interconnection to a BPA transmission line as part of a specific wind project.

The BLM has completed its Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States (“Wind PEIS”), which focuses on public land administered by the BLM in 11 western states, excluding Alaska. Upon releasing the final document, the BLM announced, “This EIS proposes a consistent, agency-wide approach to wind energy permitting that will support and expedite site-specific analysis of individual wind projects.” In plain English, this means that BLM has laid the environmental groundwork to speed up the permitting of wind energy in the 11 western public-land states. It should pave the way for development of more than 3,200 MW of wind energy on public lands in 11 western states. The Wind PEIS and related documents can be viewed at <http://windeis.anl.gov/>.

The Forest Service has not prepared a programmatic EIS for wind energy development but has generally followed BLM’s lead. However, the U.S. Department of Agriculture is presently undertaking a rulemaking process that would result in new directives related to siting, processing proposals and applications, and issuing permits for wind energy uses on Forest Service lands. Additionally, the new directives would provide specific guidance on wildlife monitoring at wind energy sites before, during, and after construction. Although the Forest Service lacks a national special-use wind-siting program and still makes its decisions about wind energy development on a case-by-case basis at the individual National Forest level, a potential wind developer should consult with the agency to assess the status of final new directives specifically focused on wind uses and wildlife monitoring. The link to the Forest Service energy documents is <http://www.fs.fed.us/recreation/permits/energy.htm>.

IV. Key Substantive Issues. Substantive issues are important to developers for two reasons: cost and risk. Accordingly, fatal-flaw analysis of the following “big-ticket” items should be part of any project planning.

A. Avian Impacts. Avian species mortality has traditionally been the single biggest issue in the siting of wind energy projects. This is due in large part to the number of birds killed, particularly at Altamont Pass in California, where turbine technology consisted of fast-moving blades and lattice towers that offered perching opportunities. The high fatality rate also occurred in part because too little was known about flyways, and migration patterns were not adequately considered in siting decisions. At other sites around the country, avian mortality rates are dramatically lower due to advances in turbine technology and tower construction, and better siting decisions. Nonetheless, avian impact concerns remain an important issue for wind project permitting, particularly in regard to bat species, whose behavioral patterns have historically been less studied and understood by biologists because of their nocturnal nature. Many permitting agencies require at least one year’s worth of avian data before issuing a site permit. In addition, conditions of permit issuance may require follow-up monitoring of avian impacts.

Avian baseline data is gathered to provide information about bird and bat use of a potential wind project site. The baseline data may allow a developer to avoid placing a project in a key flyway or other area of heavy avian use,

thus reducing the possibility of high avian mortality. Post-construction avian fatality monitoring is performed to determine the bird and bat impacts of an operating wind project. In accordance with fairly well-developed statistical concepts, the monitoring is often done on only part of the operating project. Fatality data provide a means of confirming siting decisions that were made on the basis of baseline avian use data. In addition, fatality data can identify specific turbines or groups of turbines with higher than expected impacts and can be used as the basis for adaptive management decisions. Tubular turbine design; technology advances in turbine design, including slower turbine tip rotation speeds; increased use of underground power transmission cables; and reduced use of guyed wires and other facilities where birds can roost lessen the risk of avian collisions.

B. Other Wildlife. Wind energy projects can also disturb other wildlife and plant species. It is important to assess whether any of the species present in the project area are listed as federal or state threatened or endangered species or state species of concern. This is generally determined through a database inventory of species likely to occur in the project vicinity, combined with site visits that typically require a spring survey for plants and some animal species.

C. Habitat (Including Soil Erosion). The final footprint of a wind energy facility is small in relation to the landmass over which the entire project, including transmission lines, is spread. Still, wind energy projects typically involve substantial grading for road and turbine base construction, with impacts on a wide variety of plant and animal species. In active agricultural areas, this issue may be of minimal importance. However, most productive wind energy sites will likely include some areas of native habitat or native species occupying previously undisturbed areas. In many western states, wildlife habitat is classified in one of several categories based on its importance to various species, and mitigation ratios are set accordingly; in some cases, no disturbance at all is allowed to the most valuable habitat types.

Soil erosion due to road and facility construction can also be a problem. Project planning should include an attempt to avoid sensitive habitats, consider mitigation for habitat impacts that cannot be avoided, and provide for soil conservation and any necessary erosion-control measures.

D. Visual Impacts. Modern onshore wind turbines can be over 260 feet tall at the hub, with blades extending the total to over 415 feet. They are sited in open areas and on ridge lines, with little available in the way of visual buffers. Lights on the turbines, which are typically required by the Federal Aviation Administration (“FAA”), can have nighttime visual impacts as well. In addition, associated substations and transmission lines can add to the visual impact of a wind project.

There appears to be a split in sensibilities between those who consider wind turbines an eyesore and those who like the visual effect of the turbines. From either perspective, for areas with broad vistas, wind energy projects can result in a fairly dramatic change to rural landscapes, with turbines typically standing in a sentinel-like manner along ridge lines or in rows through pastures and fields. When wind energy projects are sited in relatively close proximity to populated areas or areas of scenic importance, visual impacts may be particularly acute. Visual modeling is usually required to assess the potential impacts of wind energy projects. Mitigation for visual impacts typically includes painting turbines a neutral color that blends into the landscape. However, aside from avoidance, options for full mitigation of visual impacts are limited although turbine lighting requirements from the FAA have been revised over the last several years to eliminate strobes and to reduce the number and placement of turbine lights at wind energy facilities while preserving the safety of aircraft.

E. Cultural Resources. It is not uncommon to discover fossil and cultural resources, including those of significance to Native American tribes, at potential wind project sites. A thorough site evaluation is generally necessary before and during construction. When appropriate, the early and constant

involvement of local Native American tribes is advisable. Mitigation may also be necessary. Such mitigation typically requires avoiding protected sites and moving the sites if they cannot be avoided. In addition, it may be necessary to have an expert in native culture or paleontology on-site during construction to protect identified sites and alert the work crew to additional sites that may be unearthed during construction.

F. Storm Water and Federal Water Crossing Permits. Factors such as road construction, steep terrain, and the proximity of streams and rivers require storm water management, including compliance with local, state, and federal storm water regulations. The presence of wetlands and streams will raise numerous other concerns relating to habitat and water resource management and may involve Endangered Species Act (“ESA”) issues through Clean Water Act section 404 consultation and/or state removal or fill laws. In addition, some wind energy projects will need to cross water bodies subject to U.S. Army Corps of Engineers jurisdiction. This includes streams flowing into navigable waters and river power line crossings. Myriad issues may arise, including salmon habitat impacts and potential impacts on bird species listed under the ESA. Federal Rivers and Harbors Act section 10 permits can often lead to the need to consult with federal wildlife agencies as well.

G. Land Use Compatibility. Compliance with applicable land use criteria will be required. Each county has its own land use criteria, which may be dictated by statewide land use requirements. County land use codes often have vague standards and criteria, requiring (or allowing) highly discretionary determinations of public need, public safety, and “compatibility” with other land uses, although with the growth of the wind industry, local jurisdictions have become increasingly aware and sophisticated in tailoring local regulations to address wind energy facilities. In Oregon, statewide planning goals must be met. The statewide goal for agricultural lands (Goal 3) limits the amount of land that can be taken out of production by a wind energy facility to 12 acres for high-value farmland and 20 acres for non-high-value farmland. When more than the allowed amount would be taken out of production, an exception to the goal must be secured. Fortunately, Oregon has determined that access roads for wind energy facilities should not be included in assessing these acreage impacts, and thus an exception is rarely needed.

An additional siting issue increasingly of concern to local jurisdictions is that of “wake effect,” a situation in which an upwind turbine is proposed for installation so close to a downwind turbine (owned by somebody else) that it may reduce the wind efficiency of the downwind turbine and consequently its productivity and profitability. In the absence of setback standards that expressly or in application eliminate wake effects, developers and landowners in crowded areas are seeking to have local permitting agencies force upwind turbine sites further into the developer’s site. Often, the demand to the county by a downwind developer or landowner is accompanied by an attorney’s letter to the upwind developer that damages may be sought due to wake-effect-driven loss of profits. Developers are cautioned to carefully examine the substantive setback criteria and procedural processes that may enable a county to impose wake-effect avoidance setbacks.

H. Noise. Some states, particularly Oregon and California, have statutes that limit the amount of noise that can be emitted by a wind energy project. Wind turbine noise decreases rapidly over distance and tends to be masked by the background noise of the wind itself. However, wind energy projects are typically sited in locations with very low ambient noise levels, which can make limits on the allowed increase in ambient noise generated by the project difficult to meet. Noise-related concerns tend to be expressed by those with homes located closest to the wind turbines. In Oregon, the noise statutes do not expressly allow an applicant to simply get permission from a nearby resident to have noise exceed the statutory limits (such as through a noise easement). As a result, applicants may be required to purchase the residence or refrain from siting turbines near the residence. Noise modeling and ambient baseline noise monitoring may be required as part of the permitting process.

I. Access to Federal Lands. Because the United States owns and manages many acres of rural land in the western states (usually through the BLM), developers are increasingly interested in securing rights for preliminary wind monitoring and for long-term wind energy projects on federal lands. In addition, wind turbines sited on private land may require an electrical transmission line to cross federal land in order to gain access to the main grid. In those cases, a right-of-way, special use permit, or easement over the federal land may be required.

The right to access federal lands for wind development falls under the Federal Land Policy and Management Act (“FLPMA”). The BLM processes applications for wind energy study and development of rights-of-way according to its Wind Energy Policy Instruction Memorandum (“IM”), which implements the Wind PEIS and FLPMA. The IM details the right-of-way application process, forms to be used, cost recovery and rental, and environmental analysis applicable to wind energy activities on BLM lands. Processing wind energy right-of-way applications is a high priority within local BLM offices. A copy of the IM is available at http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2006/2006-216__.html.

Access to National Forests is also governed by FLPMA. As with wind energy policy in general, the Forest Service lags behind the BLM in developing national-level guidance for obtaining permission to use National Forest lands. However, the federal rulemaking presently under way will ultimately result in more specific guidelines for wind developers wishing to access National Forests through the procurement of special use permits.

V. Timing. To develop a project-specific assessment of issues that may cause permitting delay, consider whether any of the following apply:

- Whether avian baseline data will be required and, if so, whether a full year (four seasons) or more of baseline data will be required as part of the permit application.
- Whether any surveys in spring or other seasons will be required for certain plant or wildlife species as part of the permit application.
- Whether a state environmental process (*e.g.*, SEPA/CEQA) or federal NEPA process will be required and, if so, whether an EIS (which in the case of NEPA typically takes at least a year to prepare) or a less comprehensive environmental document will be required.
- Whether a cultural and archaeological site survey will be required and how long it will take to complete such a survey (if the survey will be completed by a Native American tribe, it may take much longer than expected).
- Whether the locality will require a conditional use permit for installation of meteorological towers to assess the wind feasibility of the site. If so, this may add weeks or months to the site evaluation process.
- Whether an easement or lease from the BLM or other federal agency will be required for the project (and, if so, what level of NEPA review will be required).

An early assessment of potential public opposition and appropriate strategies to respond to controversies and opposing environmental opinions is also strongly advised.