Mitigating Wildlife Impacts During Pre-Construction

Minimizing your exposure to environmental risks can go a long way toward ensuring your project encounters few problems on the path to completion.

BY ROBIN DORNFEST

Wind power is much more environmentally friendly than traditional energy sources, because it produces fewer carbon emissions. For that reason, the federal government offers tax incentives to wind developments, and state laws mandate that utilities obtain a specified amount of their energy from renewables, most likely wind.

At the same time, wind farm developers face a dizzying array of local, state and federal environmental permitting requirements – despite the positive environmental impact of their project.

But while wind turbines themselves garner much of the focus, the access roads leading to the site can also be problematic when it comes to environmental impacts. The habitats of nearby animals, wetlands, surrounding waterways and stormwater drainage are all at risk.

Failing to properly manage and mitigate these environmental impacts can add costly delays to a construction project, or possibly kill it.

Federal regulators are keen to strike a balance. The U.S. Fish and Wildlife Service (FWS), for instance, has developed guidelines on how to reduce projects' environmental impacts. The same agency is working in partnership with the industry through the National Wind Coordi-

nating Collaborative to address these environmental impacts.

The lesson is that wind developers should consider common environmental impacts and mitigation strategies well before the first shovel of earth is moved.

Common impacts

The environmental impacts of wind developments include bird or bat-kills, noise emissions, wetland and waterway disturbances, and encroachments on endangered species' habitat.

Because many wind farms are located in rural locations and on topographic highs, developers must build construction and maintenance roads.

Evaluating the many risks can be a daunting task, due to the raft of factors at play, but developers can become educated on when and why environmental assessment (EA) will be required. EAs usually occur during three key project phases: pre-purchase, project financing and pre-construction.

Pre-purchase EAs, typically required by lenders, evaluate the potential for site contamination. At a minimum, lenders want to understand any risks associated with locating a wind farm on or near contaminated ground.

As the development progresses, further analysis, such as an EA or an environmental impact statement (EIS) may be required.

An EA briefly documents the likely environmental impacts, unavoidable adverse environmental impacts and alternatives (including taking no action) to the proposed project. If the project calls for applying for a federal permit or land-use authorization, connecting to a federally managed transmission line or using federal grant money, the developer will need to prepare a formal EA for review by the appropriate federal agency.

If the EA indicates significant environmental impacts, the developer may then need to prepare a formal EIS.

Developing and submitting an EIS can be costly and take months to years. An EIS doesn't mean that the project has to avoid all environmental impacts. It simply means the project team must be open and honest about the impacts, and must give the public the opportunity to weigh in on the development before it is under way.

Here are four of the most common environmental challenges developers face during pre-construction:

Wildlife. One of the largest risks to a wind energy project is its potential to impact animal and plant habitat – either directly or indirectly. The U.S. Endangered Species Act (ESA), as well as specific state endangered species laws, spell out how to protect endangered and threatened animals. For example, in the Rocky Mountain West, protected species include the Preble's jumping mouse, the Ute ladies'-tresses orchid and the black-footed Ferret.

Administered by the FWS, the federal ESA aims to protect, and recover and restore to ecological health imperiled species and their ecosystems. As of 2008, more than 1,350 U.S. species were endangered, and two-thirds of them have at least some habitat on private land.

Under the ESA, it is illegal to take, harass, kill or harm an endangered or threatened animal without a permit. Wind farms run into problems with the act primarily as it relates to the definition of the term "harm," which includes modifying the animal's habitat and impairing its ability to breed, feed or gain shelter.

A qualified biologist can determine if a project will harm or kill protected animals and plants. If a project has the potential to impact a species, it is critical to consult with the FWS. The agency will issue an opinion on the proposed development and either advise the project

to relocate or recommend that specific construction methods be used or other adjustments be made.

As a next step, the project developer might secure a permit to proceed with development, under what is known as an "incidental take permit." These permits require the creation of an approved habitat conservation plan. This plan includes an assessment of how the project impacts the species, steps taken to mitigate the impacts and a description of the funding required to carry out these steps.

Although there are no federal laws against harming endangered plants on non-federal lands, it is a good idea to develop conservation measures for listed plants, as well.

Migratory birds. Migratory birds have become one of the biggest challenges for wind farm developers.

Several years ago, the iconic Altamont Pass wind farm was forced to stop producing power after environmentalists threatened a lawsuit over the death of thousands of birds, including Golden Eagles.

Lesser known than the ESA, the Migratory Bird Treaty Act makes it illegal to kill migratory birds without a permit. A similar law, the Golden Eagle Protection Act, makes it illegal to kill Golden Eagles, as well.

Fortunately, migratory patterns are well established and change little year to year, and flyways are only active seasonally.

If a project appears to be in the middle of a migratory path, developers should consult the FWS to develop a mitigation plan. The plan might require changing the configuration of the turbine locations to avoid cliffs and rims often frequented by raptors such as Golden Eagles, hawks and falcons, or grouping turbines, rather than spreading them out. Developers may also need to lower turbine height or change the turbine design to make it less attractive as a perch for nests.

Wetlands and waterways. Aside from wildlife and birds, developers should also be cautious if their project is sited near or around bodies of water, including lakes, ponds, streams or wetlands.

If turbines, access roads or transmission lines cross or encroach on these waterways, the Clean Water Act, a federal law that regulates discharges into streams, lakes and other waterways, could regulate them.

To address this environmental risk, the first step is to engineer or design around waterways or wetlands. If siting in the area is unavoidable, developers may need to apply for one of several permits, such as a Section 404 Permit. Obtaining regulatory approval can take a significant amount of time and money, and may require that you build an off-site wetland mitigation plan.

Stormwater. Federal and state environmental regulators are becoming increasingly strict about how construction sites and new developments handle and dispose of stormwater.

Stormwater is rain or snowmelt that normally, in small amounts, flows over soil into waterways. Construction can alter the land's natural hydrology, increasing the volume, velocity and temperature of runoff. That, in turn, can lead to high volumes of water eroding stream banks and flooding streams which carry sediment, oil, garbage and chemicals into surrounding waterways, disturbing fish and aquatic life.

The Clean Water Act says that all developers involved in clearing more than one acre of land should obtain a National Pollutant Discharge Elimination System permit for their stormwater discharges. These permits are available through the state environmental authority or the Environmental Protection Agency.

To obtain a permit, regulators require a Stormwater Pollution Prevention Plan (SWPPP). An SWPPP identifies potential sources of stormwater at the construction site and describes how the developer plans to reduce pollutants in stormwater discharges. WP

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