
FIRMS INVOLVED IN PREPARATION OF THIS DEIS

This Draft Environmental Impact Statement has been developed pursuant to the State Environmental Quality Review Act (6 NYCRR 617) under the direction of the Applicant, New Grange Wind Farm LLC, with input from the following list of preparers.

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EXECUTIVE SUMMARY

This Draft Environmental Impact Statement (DEIS) is being prepared to describe the potential environmental impacts and mitigation measures associated with the construction and operation of the proposed New Grange Wind Farm (the Project) as required under the New York State Environmental Quality Review Act (SEQRA) (6 NYCRR 617). Provided below is a brief Project description, along with summaries of the regulatory process; the Project's purpose, need, and benefit; a summary of potential environmental impacts; and proposed mitigation measures. Alternatives to the Project and its effect on use and conservation of energy are also reviewed.

Project Description

New Grange Wind Farm LLC (the Applicant), a Delaware subsidiary of Horizon Wind Energy LLC, is proposing to develop a wind-powered generating facility of up to 47 wind turbines with a maximum capacity of 79.9 megawatts (MW). The proposed Project would generate enough power to meet the electrical needs of approximately 35,000 New York households. In addition to the wind turbines, the Project will involve construction of up to four permanent meteorological towers, a system of gravel access roads, a buried and overhead electrical collection system, an operation and maintenance building, and an interconnection substation facility.

The Project will be developed on leased private land in the towns of Arkwright and Pomfret in Chautauqua County, New York (see Figure 1.1-1, Project Area). All wind turbines will be located in the Town of Arkwright. The Project will be constructed in one phase, currently anticipated to commence as early as fall 2008 and to finish in fall/winter 2009.

Once built, the wind turbines and associated components operate in almost a completely automated fashion. The Project will, however, employ approximately 10 to 15 personnel.

Regulatory Process

This DEIS has been prepared by Tetra Tech EC, Inc. (Tetra Tech) of Boston, MA. This document is intended to facilitate the environmental review process and to provide a basis for informed public comment and decision-making. This process is in accordance with the requirements of SEQRA. The Town of Arkwright is acting as Lead Agency to provide a review under SEQRA. Various support studies have also been performed for the Project, which provide detailed information on discrete topical areas in furtherance of the SEQRA evaluation. These studies include, but are not limited to, the following:

- Cultural Resource Investigation
- Transportation Study
- Aviation Hazard Assessment and Consultation
- TV Broadcast Off-Air Reception
- Licensed Microwave Search and Worst Case Fresnel Zone
- Avian and Bat Studies



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- Visual Impact Assessment Report
 - Shadow Flicker Impact Analysis
 - Environmental Sound Survey and Noise Impact Assessment
 - Wetland Resources Assessment
 - Property Value Impact Assessment

Purpose, Need, and Benefit

The purpose of the proposed action is to create a wind-powered electrical-generating facility that will provide a significant source of renewable energy to the New York power grid. The Project would facilitate compliance with the Public Service Commission (PSC) "Order Approving Renewable Portfolio Standard Policy (Order)," issued on September 24, 2004. This Order calls for an increase in renewable energy used in the state to 25 percent (from the then level of 19 percent) by the year 2013. The Project responds to objectives identified in the 2002 New York State Energy Plan (State Energy Plan) and Final Environmental Impact Statement (New York State Energy Planning Board 2002), and the Preliminary Investigation into Establishing a Renewable Portfolio Standard in New York (NYSERDA 2003). These objectives include stimulating economic growth, increasing energy diversity, and promoting a cleaner and healthier environment. The benefits of the proposed action include positive impacts on socioeconomics (e.g., payment-in-lieu of tax (PILOT) revenues to local municipalities, lease revenues to participating landowners, and reduced wholesale electricity prices statewide), air quality (through reduction of emissions from fossil-fuel-burning power plants), and climate (reduction of greenhouse gases that contribute to global warming). The principal, overriding benefits of the Project are in complete accordance with the 2002 State Energy Plan (New York State Energy Planning Board 2002), namely:

“Stimulating sustainable economic growth”

“Increasing energy diversity...including renewable-based energy”, and

“Promoting and achieving a cleaner and healthier environment”

Summary of Potential Impacts

In accordance with the requirements of SEQRA, potential impacts arising from the proposed action were identified early in the application process and are evaluated in this DEIS with respect to an array of environmental and cultural resources. Provided below is a summary list of potential impacts that may occur in association with the construction and/or operation of the Project. These impacts and associated mitigation measures are described in greater detail in this DEIS.



Environmental Factor	Potential Impacts
Topography, Geology, and Soils	<ul style="list-style-type: none"> • Soil erosion • Soil compaction • Loss of agricultural land
Surface and Groundwater Resources	<ul style="list-style-type: none"> • Stream crossings • Siltation/sedimentation • Temporary disturbance • Wetland filling • Permanent stream crossings
Biological Resources	<ul style="list-style-type: none"> • Vegetation clearing • Incidental wildlife injury and mortality • Loss or alteration of habitat
Land Use and Zoning	<ul style="list-style-type: none"> • Adverse and beneficial impacts on farming • Changes in community character and land use trends
Socioeconomic	<ul style="list-style-type: none"> • Host community payment / PILOT • Revenue to participating landowners • Expenditures on goods and services • Tourism • Short and long-term employment
Transportation	<ul style="list-style-type: none"> • Road wear • Traffic congestion/delays • Road system improvements/upgrades
Cultural Resources	<ul style="list-style-type: none"> • Visual impacts on architectural resources • Disturbance of historic archaeological resources
Visual Resources	<ul style="list-style-type: none"> • Visual change to the landscape • Visual impact on sensitive sites/viewers • Shadow-flicker impact on adjacent residents
Community Services, Public Utilities, and Infrastructure	<ul style="list-style-type: none"> • Demands on police and emergency services • Telecommunication interference • Utility distribution lines and poles • Bulk power system upgrade • New source of clean renewable energy
Communications	<ul style="list-style-type: none"> • Interference with public, private or government communication facilities.
Public Safety	<ul style="list-style-type: none"> • Stray voltage • Tower collapse/blade failure • Ice throw • Lightning strike • Fire

Environmental Factor	Potential Impacts
Climate and Air Quality	<ul style="list-style-type: none"> • Construction vehicle emissions • Dust during construction • Reduced air pollutants and greenhouse gases
Noise	<ul style="list-style-type: none"> • Construction noise impacts on neighboring/adjacent residents • Operational noise impacts on neighboring/adjacent residents

The Project is expected to result in positive, long-term socioeconomic impacts within the Project Area and across the state, and to provide benefits to the region’s air quality.

The Project will result in minor, generally short-term impacts to soils, vegetation, wetlands, wildlife habitat, and transportation facilities as a result of Project construction. The Project will have long-term effects on community character, avian/bat resources, ambient noise levels, and some historic and visual resources during operation. However, with the inclusion of proper mitigation measures, and a Complaint Resolution Procedure (Appendix N), operational impacts other than the Project’s visibility will be limited and minor.

Summary of Mitigation Measures

Various measures will be taken to avoid, minimize and/or mitigate potential environmental impacts. General mitigation measures will include adhering to requirements of various local, state, and federal ordinances and regulations, and entering into development agreements with adjacent landowners. The Applicant will also employ an environmental inspector to assure compliance with permit requirements and environmental protection commitments during construction and operation of the Project. The proposed Project will result in significant environmental and economic benefits to the area. These benefits also serve to mitigate unavoidable adverse impacts associated with Project construction and operation.

Specific measures designed to mitigate or avoid adverse potential environmental impacts during Project construction or operations include the following:

- Siting the Project away from population centers and areas of residential development.
- Locating access roads and turbines along field edges where practical and in field corners to avoid or minimize disturbance of agricultural land.
- Keeping turbines a minimum of 1,200 feet from residences to minimize noise and visual impacts.
- Utilizing multiple-megawatt scale turbines to reduce the length of interconnect and access roads per megawatt of capacity.



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- Burying electrical interconnection lines between turbines except where unavoidable due to sensitive environmental/cultural resources or construction constraints, in order to minimize agricultural impacts.
 - Using existing roads for turbine access whenever possible to minimize disturbance to agricultural land, wildlife habitat, wetlands, and streams.
 - Utilizing construction techniques that minimize disturbance to vegetation, streams, and wetlands.
 - Siting the interconnection substation facilities in an area screened by existing mature vegetation.
 - Painting the turbines with a matte non-specular finish.
 - Developing and implementing a sedimentation and erosion control plan.
 - Proposing a compensatory stream/wetland mitigation program.
 - Siting select turbines to avoid or minimize wetland, wildlife, or visual impacts.
 - Performing post-construction monitoring to improve understanding of possible avian impacts.
 - Siting turbines to avoid interference with microwave and AM/FM communication systems.
 - Siting turbines to avoid interference with exiting gas wells and infrastructure.
 - Implementing agricultural protection measures to avoid, minimize, or mitigate impacts on agricultural land and farm operations.
 - Developing a traffic and dust management plan during construction.
 - Upgrading public roads utilized during construction.
 - Finalizing a component delivery plan that minimizes impacts on residential areas.
 - Developing and implementing a historic resource protection plan in concert with the New York State Historic Preservation Office.
 - Developing and implementing a Complaint Resolution Procedure.

Alternatives

Alternatives to the proposed Project that were considered and evaluated include no action, alternative Project location, alternative Project design/layout, alternative energy production technologies, alternative turbine technology, alternative Project size/magnitude, and alternative Project timing. Analysis of these alternatives revealed that the size, type, number, and the configuration of the turbines as currently proposed are necessary to produce a commercially feasible Project. The Applicant has investigated several alternative locations across western New York and rejected many locations due to significant development constraints, including migratory bird issues, incompatible land uses, lack of contiguous land, a lack of adequate wind resource, unsuitable transmission facilities, and lack of likely community acceptability. All suitable locations, including the proposed Project Site, must be seriously considered if the State is to meet its obligations regarding domestic generation of renewable energy by 2013. The Applicant has nearly continuously revised the Project layout since its inception in an effort to



optimize the balance between energy generation with the protection of agricultural, environmental, and aesthetic resources, as well as community safety and welfare. The Applicant considered several types of wind energy conversion technologies for the Project. However, the 3-bladed, upwind, horizontal axis, propeller-type wind turbine provides the smallest land-use footprint per unit of energy generated, and has demonstrated itself as the most reliable and commercially viable for the application of utility scale electrical power generation. The Applicant has reduced the size of the originally proposed Project layout from over 60 turbines to the 47 currently proposed and reviewed in this DEIS. This reduction in size was made in large part due to the siting parameters described above. The Applicant has also considered reducing the Project size by using either smaller turbines in this current layout. Doing so, however, would not fully capture the available wind resource and both hurt the State's objective of supplying domestic renewable energy, as well as the Project's ability to offset fixed expenses associated with construction and connecting to the power grid. In summary, the alternatives analysis concluded that the Project as proposed offers the optimum use of resources with the fewest potential adverse impacts.

Effects on Use and Conservation of Energy Resources

The proposed Project will have significant, long-term beneficial effects on the use and conservation of energy resources. Energy will be expended during the construction phases of the Project, as well as for the maintenance of the wind turbines and support facilities on the Project Site. However, the operating Project will generate up to 79.9 MW of electricity from a renewable resource (the wind) without any fossil-fuel emissions. This greatly exceeds the energy required to construct and operate the Project. The output from the Project would be sufficient to power approximately 35,000 households in New York State (on an average annual basis). The Project will add to and diversify the state's sources of power generation helping to stabilize power prices currently subject to spikes in fossil fuel prices. Over the long-term, the Project will displace some of the state's older, less efficient, and dirtier sources of power and, at a minimum, will stave off the need to build new fossil fuel plants.

