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cost of turbine maintenance due to higher wind turbulence in the blade area and this would increase the cost of turbine maintenance.

While larger and smaller turbines were an option, ultimately, Noble chose to continue to use GE 1.5 MW turbines. Noble uses this same turbine model for the Noble Bliss and Noble Wethersfield Windparks in Wyoming and Allegany counties as well as sites in northern NYS and Michigan. The continued use by Noble of GE 1.5 MW turbines was ultimately selected for several reasons: they are among the quietest operating machines, the GE Company is financially strong and fully capable of standing behind its equipment, the turbines incorporate state-of-the-art operating features, and GE and Noble management personnel have a long and positive working relationship.

The GE 1.5sle wind turbine is offered in North America with two hub heights (the center of the rotor), 65 meters, and 80 meters above ground. Hub heights of 100 meters are available in Europe from GE and turbines with hub heights of greater than 100 meters are available in North America from manufacturers other than GE.

Wind speed increases with height above ground. The rate of increase per meter of elevation is greatest near the ground and lessens with elevation above ground. A wind turbine therefore would appear to be most economical with the tallest structure possible. However, there is a substantial cost to reach the higher hub heights. Not only is there a greater investment in tower steel, but the foundation requirements multiply as well compared to shorter towers. Thus, there is an optimum height where the reach for higher wind resources is worth the added investment. Beyond this height, the increase of wind speed with height is insufficient to justify the investment.

There is a further consideration in areas where substantial trees occur, as in this Project area. Trees are a source of turbulence. Turbulence puts variable loads on the machinery and too much turbulence can significantly increase maintenance costs. Fortunately, turbulence decreases with height above ground. Much like wind speed, the rate of decrease of turbulence is greatest near the ground and lessens at higher elevations above ground. Again, this results in an optimization where added hub height reduces maintenance costs, but beyond a certain height, the reduction in maintenance costs does not justify the cost of a further increase in height. Noble has determined that the 80-meter hub height is the most economical GE model choice considering issues of energy productivity and maintenance costs versus capital cost.

1.4 Project Purpose, Needs, and Benefits

1.4.1 Project Purpose and Need

The Noble Ball Hill Windpark will use wind, a renewable resource, to generate electricity and avoid the use of any fuels or water and will produce zero emissions or waste discharge. This electricity will be provided to the New York Independent System Operator (NYISO) grid for distribution to meet consumer demand.

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The Project will have capacity sufficient to generate approximately 90 MW of power to the NYISO grid, contribute to the achievement of New York State's Renewable Portfolio Standard (RPS) and fill the need for a diverse national energy portfolio that includes a higher percentage of energy generated from renewable resources. Renewable energy projects reduce reliance on both domestic and foreign fossil fuel resources and diversify the range of resources used to produce the electricity necessary to meet state and national electrical needs. In addition, renewable energy projects avoid air emissions from fossil fuel combustion commonly used for electrical generation. These emissions are detrimental to air quality and have been documented to adversely affect human health.

1.4.2 Effects on Use and Conservation of Energy Resources

The New York State Energy Plan sets a stated goal of increasing the share of renewable energy as a percentage of statewide primary use 50% by 2020 (up from 10% in 2000 to 15% in 2020). The State Energy Plan reports that at the end of 2005, the renewable energy share was at 10%. The State Energy Plan sets forth the following policy recommendations in achieving 15% use from renewable resources by 2020:

- The state should competitively solicit 60 to 120 MW of renewable electricity generation to meet the requirement of Executive Order No. 111, which requires up to 10% of state facilities' electricity be provided from renewable resources by 2005 and 20% by 2010.
- The NYPA should competitively solicit bids for long-term contracts for the purchase of 100 MW of electricity capacity from renewable energy sources. In addition, NYPA should increase its annual investment in energy efficiency by 25% and continue to cooperate with New York State Energy Research and Development Authority (NYSERDA) and the Long Island Power Authority in program offerings and delivery.

The Noble Ball Hill Windpark helps achieve the State Energy Plan's goal of increasing the share of renewable energy use in the New York. NYSERDA reported in 2007 that the total renewable capacity supported by the RPS program since its inception could approach 1,162 MW by the fall of 2008. It is estimated that this renewable capacity could generate more than \$720 million of in-state economic benefits over a 20-year period, excluding the impact of any economic roll-over multipliers or energy price suppression effects (NYSERDA 2007). In addition to the economic benefits, this renewable capacity will provide added environmental benefits, by avoiding increases of nitrogen oxides, sulfur oxides, and carbon dioxide.

New York State's Energy Plan is considered to be among the most aggressive in the nation and is consistent with the National Energy Policy, which states that the United States has the technology needed to meet our principal energy challenges including:

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- Promoting energy conservation;
- Repairing and modernizing our energy infrastructure; and
- Increasing our energy supplies in ways that protect and improve our environment.

Renewable and alternative energy supplies help diversify our energy portfolio and result in few adverse environmental impacts. The current contribution of renewable and alternative energy resources to the state and the national total electricity supply is relatively small; however, the renewable and alternative energy sectors are growing. Continued growth of renewable and alternative energy is vital to delivering clean energy to fuel our future economic growth. To stimulate investment in renewable energy production, the federal government provides tax incentives for the development and use of renewable energy technologies⁴.

According to the provisions of Article 4, Section 68 of the New York State Public Service Law, no entity can begin the construction of an electric plant generating more than 80 MW without first obtaining a Certificate of Public Convenience and Necessity (CPCN) from the Public Service Commission (PSC). By issuing the certificate the PSC grants its permission for and approval of the construction and operation of the Project. The PSC can only issue a certificate for a project it finds is necessary or convenient for the service of the public. Noble will file a petition for a CPCN for the Noble Ball Hill Windpark with the PSC.

1.4.3 Project Benefits

The construction and operation of the Project will result in positive environmental, economic, and energy benefits.

The Project would result in the addition of approximately 90 MW of clean, renewable electric energy to the power grid with no air emissions. In comparison, the addition of 90 MW of electric generation by fossil fuel-fired facilities (i.e., natural gas or coal) presents serious consequences in the form of, among other things, air emissions (i.e., carbon dioxide, sulfur dioxide, nitrogen oxides, particulate matter, and mercury). The adverse environmental and health effects of air emissions from combustion of fossil fuels are well-documented and include global warming, acid rain, smog, respiratory health effects, and significant long-term impacts on wildlife.

Local economic benefits of the Project will include:

- Temporary and permanent employment;

⁴ The renewable Electricity Production Tax Credit provides a tax credit for each kWh of energy produced by eligible renewable generators including wind. The tax credit was originally established under the authority provided in 26 U.S.C §45 and was renewed in the Energy Policy Act of 2005, §1301. However, this credit is set to expire at the end of 2008 if it is not renewed.

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- Increased commerce in the Towns due to spending by project employees, suppliers, and local merchants;
- An increased flow of revenue to the county, Towns, and school districts through PILOT payments;
- An increased flow of revenue to landowners through easement agreements; and
- Increased economic diversification.

Construction of the Project will result in the direct employment of approximately 185 electrical workers, crane operators, equipment operators, carpenters, iron workers, riggers, laborers, and other construction workers (with a total estimated payroll and benefits of \$7.7 million) and create approximately 200 additional direct, indirect, and induced jobs countywide (with a total estimated payroll and benefits of \$5.2 million). A significant percentage of the construction workers employed during the construction period will be hired from within the local community to the extent that qualified workers are available. Personnel specially trained in specific procedures for wind turbine construction will be brought in and temporarily housed in the area during the construction phase of the Project.

During plant operations the Project will employ approximately eight workers: skilled operators (six), management (one), and administrative personnel (one), with a total estimated payroll and benefits of \$450,000. Operation of the project is estimated to create 16 more direct, indirect, and induced jobs countywide (with a total estimated payroll and benefits of \$439,000).

The Project will spend a total of about \$26.9 million countywide during construction. Total economic benefits during construction are estimated at \$42.7 million, including payrolls, supplies, materials, hotel stays, meals, and economic multiplier effects. During plant operation, the Project will spend an estimated \$1.7 million annually, exclusive of property taxes. Total annual economic benefits during operation are estimated at about \$3.1 million (including PILOTs), including payrolls, supplies, materials, windpark easement payments, and economic multiplier effects. Total countywide economic benefits, based upon regional multipliers applied to direct Project expenditures in original capital investment and ongoing operational expense, are estimated to be about \$128 million over 20 years.

The Project will extensively utilize and support providers of local services, suppliers, and area manufacturers during both construction and operation.

Noble has proposed to provide payments to both Towns and other taxing authorities in the form of a PILOT program and host community agreements. These payments will result in a significant increase in local revenue for the taxing authorities. Significantly, the Project will not place additional demands for services upon the local municipalities or school districts.

The Project will assist in the revitalization of the local economy by providing steady income through easement payments to farmers and other landowners. Many of the landowners are farmers and the additional income from annual lease payments is expected to help stabilize their income and provide some relief from the cash-flow fluctuations inherent to the agricultural industry.

Additional value to the local economy will result from increased diversification of the county and state economic bases. Economic diversification ensures greater stability of the economy by minimizing financial high and low cycles associated with a specific industry. This effect is particularly important in rural areas, where more goods and services are imported and more dollars leave the region.

1.4.4 Growth Inducing Aspects of Action

While the Project will create temporary construction and new permanent jobs and provide a new revenue source for the county and Towns, as well as multiplier effects, it is not anticipated to lead to significant new growth (i.e., residential, commercial, or industrial) in the Towns of Villenova and Hanover or the surrounding areas. In the short-term, there will be some minor growth inducing aspects related to the Project. Temporary employment opportunities (approximately 185) will exist for area residents and other workers during the construction phase. Local commercial establishments may experience increased sales as a result of the Project and the presence of these workers for an extended period of time. In the long-term, employment opportunities will be available for approximately eight workers for the O&M of the turbines and associated facilities. Noble anticipates technicians would be hired locally to the greatest extent practicable, who will be trained to operate and maintain wind turbines. As a result, no new residential growth is expected from the Project.

The roadway network will not be significantly altered, with the exception of several intersections whose widths will be modified to accommodate large vehicle turning radii. These intersection improvements are not designed to increase traffic capacity or facilitate growth and will be returned to their original condition following construction. The Project does not include any new public utility infrastructure improvements, such as water or wastewater systems, which would enhance capacity or facilitate residential or industrial growth. Commercial growth will be limited to those businesses which supply site maintenance, vehicle maintenance, and general mechanical and office supplies to the Project O&M facility.

Power generated by the Project will be supplied to the NYISO bulk transmission system (BTS) and not to individual retail customers. As mentioned previously, the presence of wind turbines may help maintain the agricultural character of the area by providing active farms a secondary source of income through easement payments. The additional income from annual lease payments is expected to help stabilize their income and provide some relief from the cash-flow fluctuations inherent to the agricultural industry.

1.4.5 Irreversible and Irretrievable Commitments of Resources

The proposed Project, like any land development project, will require the irreversible and irretrievable commitment of certain human, material, environmental, and financial resources. However, the commitment of these resources is expected to be offset by the benefits accruing from construction and operation of the Project.

Human and financial resources have been and will continue to be expended by Noble, various NYS agencies, Chautauqua County, and the Towns of Villenova and Hanover for the planning and review of the Project. Noble has entered into an escrow agreement with the Town of Villenova to cover third-party costs incurred by the Town in its capacity as Lead Agency in the SEQRA review process.

The Project requires the commitment of land for the life of the Project. Five thousand, five hundred sixty-nine acres (approximately 3,669 acres in Villenova and 1,900 acres in Hanover) within the 13,658-acre Project Area will be under agreement for development of the Project; however, a small percentage of that will be committed for the actual footprint. While the majority of the land under agreement can continue with existing land uses once the Project is operational, the actual locations of the turbines, access roads, substation, switchyard, and O&M facility would not be available for other purposes for the life of the Project. In accordance with the decommissioning plan, the turbines will be removed at the end of their useful life and the land may be reclaimed for other uses. The commitment of this land to the Project would be neither irreversible nor irretrievable. It is possible that after the end of the useful life (approximately 20 years or more), the turbines can be replaced with newer, technologically advanced, and more efficient turbines.

During the life of the Project, surface drainage patterns may be altered due to the addition of impervious surfaces, such as turbine pedestals, substation, switchyard, and O&M facility. Noble will restore the ground surface to pre-existing grade to the extent practicable through the Project post-construction restoration plan. Temporary loss of habitat could result in a temporary displacement of plants and animals. Any impacts to wildlife will be minimized to the greatest extent practicable and will be monitored and mitigated as appropriate based on post-construction monitoring and agency requirements.

Construction materials and building supplies will be committed to the Project. The use of these materials, such as gravel, concrete, steel, represents a long-term commitment of these resources which would not be available for other projects. Some of these materials may be reusable and recycled after Project decommissioning; however, many of the concrete foundations will not be recycled, but will be left in place below 3 feet.

Energy resources would be irretrievably committed to the Project, during both the construction and operation of the Project. Fuel, lubricants, and electricity will be required during site preparation and turbine construction activities for the opera-

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tion of the various types of construction equipment and vehicles, and for the transportation of workers and materials to the construction sites. The primary energy source needed to operate the facility is abundant and renewable. The conventional energy resources used to construct and operate the Project would be minor compared to the clean, renewable energy generated by the Project.

1.5 Table of Required Permits and Consultations

Table 1-2 indicates each of the permits that Noble has or will apply for in order to construct and operate the Project and the status of those permits and consultations. Copies of agency correspondence are included in Appendix C.

Table 1-2 Required Permits and Consultations

Permit or Consultation Required	Agency	Status
Acceptance of DEIS, FEIS and issuance of findings	SEQRA Lead Agency	DEIS accepted October 8, 2008
Zoning Amendment to Create a Wind Overlay District	Town of Villenova Town Board	Application will be submitted prior to construction
Special Use Permit	Town of Villenova Town Board	Application will be submitted prior to construction
	Town of Hanover Town Board	Application will be submitted prior to construction
Special Use Permit/Site Plan Recommendation	Town of Hanover Planning Board	Application will be submitted prior to construction
Section 404: Waters of the U.S. Jurisdictional Determination	United States Army Corps of Engineers	Joint Permit Application
GML § 239-m referral	Chautauqua County Planning Board	Application will be submitted prior to construction
Article 15 – Stream Disturbance Permit	New York State Department of Environmental Conservation	Joint Permit Application
Article 24 – Freshwater Wetlands Permit	New York State Department of Environmental Conservation	Joint Permit Application
Sect. 401: Water Quality Certification	New York State Department of Environmental Conservation	Joint Permit Application
Article 17 – SPDES – General Permit for Stormwater Discharges from Construction Activity	New York State Department of Environmental Conservation	Application will be submitted prior to construction
No Hazard to Aviation Determinations	Federal Aviation Administration	Application will be submitted prior to construction
Highway Work/Utility/Non-Utility Permits	NYS Department of Transportation	Application will be submitted prior to construction
Chautauqua County Road Use Agreement	Chautauqua County Highway Superintendent	Application will be submitted prior to construction
Road Use Agreements	Town Boards of Villenova and Hanover	Application will be submitted prior to construction
Host Community Agreements	Town Boards of Villenova and Hanover	Application will be submitted prior to construction

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Permit or Consultation Required	Agency	Status
Consultation	US Fish and Wildlife Service	Consultation letters sent (May 19, 2008), see Appendix C
Consultation	Historic Preservation NYS Office of Parks, Recreation and Historic Preservation	Consultation letters sent (March 21, 2008), see Appendix C
Consultation	NYS Department of Agriculture and Markets	Consultation conducted on July 22, 2008.
Public Service Law Sect. 68 Certificate of Public Convenience and Necessity	NYS Public Service Commission	Application will be submitted prior to construction
Building Permits	Town of Villenova Code Enforcement Officer of Consultant	Application will be submitted prior to construction
	Town of Hanover Code Enforcement Officer or Consultant	Application will be submitted prior to construction
Zoning Permit	Town of Villenova Code Enforcement Officer	Application will be submitted prior to construction
PILOT Agreement Approval	Chautauqua County Industrial Development Agency	Application will be submitted prior to construction

1.6 Public Information Program (PIP)

As an important part of the planning process for the Ball Hill Windpark Project and transmission line, Noble is seeking input from the Town Boards of Hanover and Villenova, the Chautauqua Chamber of Commerce, landowners within the Ball Hill Project footprint, and area residents. As part of the process, Noble has developed a comprehensive Public Information Program (PIP) with the objective of disseminating information on the proposed Ball Hill Windpark, and encouraging public input for the permitting of the Windpark. In 2006, Noble first introduced the Project to the public to include the Hanover and Villenova Town Boards at an open public meeting. Since then, various meetings with local officials, regulators, landowners, and area residents have been conducted.

In November 2006, Noble Environmental Power conducted an open house on two separate nights for all landowners and interested parties involved in the Ball Hill Windpark. These meetings lasted three hours and over 200 landowners were invited. Questions were answered by Noble employees with regards to the Windparks, transmission line facilities, and construction timeline.

Additionally, the information below provides a summary of the meetings and conferences that have been held thus far through the outreach process. Additional information is also provided regarding ongoing and future activities designed to enhance public awareness.

May 20, 2008 – Town of Villenova Special Meeting

This meeting was held in the Villenova Town Hall on May 20, 2008. Noble Power submitted an application to the Town of Villenova. This application in-

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cluded maps, lists of landowners, and proposed facility locations amongst other items. The meeting was attended by approximately five persons and allowed local residents to voice comments regarding the Ball Hill Windpark Project. The Town of Villenova passed a resolution declaring its notice of intent to be Lead Agency.

June 23, 2008 – Town of Villenova Special Meeting

This meeting was held in the Villenova Town Hall on June 23, 2008. The meeting was attended by approximately 10 persons. The Villenova Town Board passed a resolution declaring Lead Agency and issued a positive declaration. Noble answered questions regarding existing Noble Windparks in western New York and disseminated information on tour opportunities.

June 23, 2008 - Town of Hanover Public Hearing

This meeting was held in the Hanover Town Hall on June 23, 2008 in order to receive public comments on the revised Hanover Local Wind Law. The meeting was attended by approximately 25 persons. Local residents primarily voiced comments regarding the Ball Hill Windpark Project. The Project appears to be very well received. Numerous supporters appeared to be in attendance. All comments asked during the question and answer period were general in nature and sought basic Project information.

Regularly Attended Villenova Town Board Meetings

The Town of Villenova has a recurring town meeting on the second Wednesday of each month. These meetings have been regularly attended by one or more Noble employees for approximately two years. The meetings include time reserved for public comments. Frequently, Noble is asked questions related to the Ball Hill Windpark. Noble representatives provide answers and invite the public to contact Noble for further information.

Regularly Attended Hanover Town Board Meetings

The Town of Hanover has a recurring Town meeting on the second and fourth Mondays of each month. These meetings have been regularly attended by one or more Noble employees for approximately two years. The meetings include time reserved for public comments. Frequently, Noble is asked questions related to Project activities including the generation and transmission facilities. Noble representatives provide answers and invite the public to contact Noble for further information. These meetings have also served as a catalyst for the SEQRA process.

Local Organization Meetings

Representatives of Noble have convened or scheduled informational meetings with various civic and social organizations throughout the Windpark Project Area. These groups include:

- Chautauqua County Chamber of Commerce;
- Dunkirk Home and Garden Show; and

- Chautauqua County Fair.

Noble Newsletters

The Fredonia Noble office helps prepare for distribution by our headquarters a recurring informational newsletter on the Ball Hill Windpark. Copies are mailed to residents within the Towns of Hanover and Villenova.

Local Presence

Noble maintains an office located in the town of Bliss, New York. The office is staffed with persons who can answer questions related to the Ball Hill Windpark Project. Additionally, printed materials are available providing general and specific information regarding the Project. Printed material addressing electric and magnetic fields associated with transmission lines are available as well.

www.noblepower.com

Noble maintains a site on the Web that provides information on its various windpark projects throughout the country. Visitors to the Web site are able to click on links leading to information on the Ball Hill Windpark and 115-kV transmission line. Noble has posted the Ball Hill Windpark Application to the Town of Villenova and the Ball Hill Project DEIS for public viewing will be posted soon.