# High Sheldon Wind Farm

# Draft Scoping Document

For the New York State Environmental Quality Review
Draft Environmental Impact Statement

Town of Sheldon
Wyoming County, New York

Prepared for:
Sheldon Town Board, Lead Agency

Prepared by:
Stantec Consulting

**March 27, 2006**

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# A. INTRODUCTION

This Scoping Document is intended to define the scope of information to be included in the Draft Environmental Impact Statement (DEIS), required by the Sheldon Town Board, as Lead Agency pursuant to the State Environmental Quality Review Act.

## A.1 Project Description

Sheldon Energy LLC ("Sheldon Energy"), a subsidiary of Invenergy Wind LLC, proposes to construct the High Sheldon Wind Farm (HSWF), a wind-powered electric generating facility in the Town of Sheldon, Wyoming County, New York. The proposed HSWF will consist of installation of up to 86 wind turbines for the purpose of generating 129 Megawatts (MW) or less of electricity in the Town of Sheldon.

## A.2 Proposed Action

Under the State Environmental Quality Review Act (SEQR) Part 617, the proposed action will include approval for the installation and operation of up to 86 wind turbines and the associated electric lines (below grade and limited overhead), a substation and related facilities including interconnection facilities for the connection to the New York State Electric and Gas Corporation's (NYSEG) existing 230 kV transmission line, access roads, parking areas, operations and maintenance facilities, and two permanent meterological towers. The potential siting of these facilities will be addressed in a "worst-case" scenario approach in order to ensure a thorough evaluation of the potential impacts in the Draft Environmental Impact Statement (DEIS)

## A.3 Purpose of Scoping and the SEQR Process

The Sheldon Town Board ("Town Board") has received twelve (12) applications for Special Use Permits from Sheldon Energy for development of the HSWF and subsequently solicited for Lead Agency status. The Town Board identified the project as a Type 1 Action for the purposes of SEQR under 6 NYCRR Part 617 – State Environmental Quality Review (SEQR). The Town Board reviewed the potential environmental impacts of the HSWF against the criteria listed in Part 617.7 and determined that the HSWF may have a significant effect on the environment and that a Draft Environmental Impact Statement (DEIS) must be prepared.

Figure 1 shows a Project layout based on the initial zoning applications submitted to the Town of Sheldon (the "Zoning Application Layout"). Pursuant to Town of Sheldon Local Law 1-2003, twelve (12) separate applications have been submitted. The applications are being reviewed together to avoid segmentation. The Zoning Application Layout is the most likely Project layout based on conditions known at the time of this Scoping Document. Changes to the Zoning Application Layout may be required to accommodate SEQRA mitigation measures and other conditions.

According to Part 617.8, Scoping is the process by which the Lead Agency identifies potentially significant adverse impacts that should be considered in a draft EIS. As part of the EIS process and in accordance with SEQR section 617.8, a Draft Scoping document was prepared by Sheldon Energy and submitted to the Town Board on February 2, 2005. A public scoping session was held on March 14, 2006 at 7:00 pm at the Strykersville Fire Hall, 594 Minkel Rd, Strykersville, NY. The scoping session was conducted to solicit public input for the preparation

of this document and to ensure that the DEIS will include relevant public concerns and will be appropriate in its scope and content. Written comments on the draft Scope were accepted until the end of the business day on Friday, 17 March 2006. Stantec Consulting Services, Inc. has been engaged by the Sheldon Town Board to assist in the preparation of a Final Scoping document to guide the development of the DEIS.

## 1.0 PROJECT DESCRIPTION

The DEIS will be prepared to meet the content and format requirements outlined in SEQR section 617.9. A general description of content or approach anticipated for each chapter is presented below.

Following the cover sheet, table of contents and executive summary, Chapter 1 will include discussions of the proposed action, project purpose, public need and benefit and a summary of the SEQR process in the context of the HSWF.

For purposes of this Scoping Document, the term "HSWF" shall mean all components of the proposed High Sheldon Wind Farm including, but not necessarily limited to installation and operation of up to 86 wind turbines and the associated electric lines (below grade and limited overhead), a substation and related facilities including interconnection facilities for the connection to the New York State Electric and Gas Corporation's (NYSEG) existing 230 kV transmission line, access roads, parking areas, operations and maintenance facilities, and permanent meterological towers. The term "Project Area" shall mean the geographical area encompassing the HSWF including all alternative locations for any component of the HSWF.

### 1.1 Project Purpose, Needs and Benefits

The DEIS will include a description of the following topics/issues:

- The Project's expected electric power generation and the need and market for this electricity;
- New York State and national policies and goals regarding wind energy;
- Description of the existing power grid in the region and its current capacity, as well as regulations governing its expansion;
- Pollutants emitted by the Project from construction through decommissioning will be described and compared to those emitted by a fossil fuel powered generating facility of comparable size. Given the uncertainties associated with the above type of analysis ("cradle-to-grave" analysis), if data for the specific turbines proposed is not readily available, results of studies from similar studies (e.g. from Denmark or elsewhere) may be used; and
- The expected economic benefits of the project due to increased jobs, increased economic activity, landowner payments, taxes, Payments in Lieu of Taxes (PILOT) and other payments will be presented and discussed.

## 1.2 General Description

The General Description section of the DEIS will, at a minimum, describe the following:

- General description of the project area, including location, topography, existing land uses, and boundaries, including aerial photos and maps;
- Total project area, area of disturbance at each individual site, final developed site areas;
- Project Layout: One or more project layout maps and aerial photos will portray proposed locations of turbines, access roads, cabling, electrical interconnection facilities with NYSEG transmission facilities, substation and related facilities, parking areas, operations and maintenance facilities, and permanent meteorological towers. Each of these Project components will be portrayed relative to the locations of existing residences (identified as participating or non-participating), public buildings, overhead electric lines, property lines, and public roads within the setback distance of the proposed wind turbines;
- Wind Turbine Information: drawings and specifications for wind turbine model(s) likely to be used in the Project, including noise specifications (refer also to Noise section);
- Foundations, Roads and Trenches: typical specifications and drawing(s) for anticipated wind turbine foundations; new access roads; and cabling (underground and overhead), junction boxes, and utility trenches;
- FAA Lighting Plan: FAA recommendations and requirements on aviation obstruction lights for wind turbines and the range of lighting plans that Sheldon Energy proposes for the Project. Lighting plan discussions will address number of turbines to be lit and lighting equipment to be used;
- Electric Collection and Interconnection Facilities. Dimensions of any electrical substation(s), the voltage of the power collection system, the location and point of interconnection on the NYSEG system, and information relevant to any potential right-of-way constraints will be provided.

## 1.3 Project Design

This section will include discussions on the factors affecting Sheldon Energy's selection of the Project location; the location of proposed Project components, including wind turbines and access roads; and likely wind turbine models.

## 1.4 Construction

This section of the DEIS will describe the following, including plans and maps as figures:

- Typical clearing and grading limits for individual turbine locations;
- Typical footings and foundations;

- Incorporation of a concrete batch plant, if required;
- Sources of sand and aggregate for the foundations;
- Structural considerations, including but not limited to roads (operating, seismic, wind, snow), public safety, visual impact, economics, and avian safety;
- Construction Material Deliveries And Storage. A plan for transport of wind turbine components, materials, and construction equipment to the site and within the Project Area will be provided, including identification of local roads that will be used;
- Spill management: identify chemicals to be used or stored onsite, if any, and describe spill response plan if applicable;
- Construction Workers' Access and Parking;
- Solid Waste Generation and Disposal;
- Sediment and erosion control: A Storm Water Pollution Protection Plan (SWPPP), including an Erosion and Sediment Control (ESC) Plan to be developed in compliance with NYS Phase II requirements;
- Construction Activities and Schedule. Anticipated schedule and phasing for Project construction will be described, including expected starting and ending dates. Principal activities to occur during each phase of construction will be described;
- Construction Areas. The DEIS shall include one or more maps depicting the areas anticipated to be impacted during Project construction, including equipment staging areas, parking areas, crane pads, and trenching areas;
- Agriculture Protection. The DEIS will summarize measures to be taken to minimize impact to existing agricultural activities, including discussion of preserving and replacing topsoil in construction areas. (See also Agricultural Resources section);
- Blasting. Discussion of whether blasting or dewatering will be required to construct tower foundations;
- Security. Security measures to be employed during construction will be described;
- Waste Disposal. Measures to be employed to properly dispose of solid and sanitary waste will be discussed;
- Dust Control. Measures planned for control of construction-related dust will be described; and
- Any use of pesticides or herbicides in clearing operations and, if applicable, specific pesticides or herbicides to be used.

### 1.5 Operation and Maintenance

This section of the DEIS will describe:

- The general operation of the Project, including the number of days per year and under what conditions the Project will operate; the number of hours per day and under what conditions the Project will operate; the number of employees required to operate the Project and what their duties will be; and the useful life of the Project;
- Routine maintenance and required equipment;
- Fire protection features proposed for the turbines, transformers, and substation;
- Security measures to be maintained during operation of the site.

### 1.6 Required Permits and Approval Requirements

This section of the DEIS will list all known and anticipated permits and approvals required from Federal, State and local authorities, including a description of the approval being sought, the current status of the application and, if applicable, the date obtained and the date of expiry.

### 1.7 Ownership

This section of the DEIS will:

- Specify owners and operators of the HSWF;
- Describe liability of the project sponsor/owner/operator.

## 2.0 GENERAL ENVIRONMENTAL SETTING

This section of the DEIS will present the general environmental setting, addressing existing conditions and providing baseline information, including:

- A general description of topographical and geological features and landforms of the local and regional setting;
- Current status of land use regulations in the Town of Sheldon, including the Comprehensive Plan;
- Implications of Local Law 1-2003;
- General land use in the project area; and
- Short and long term development plans of adjacent Townships and their implications for the project.

# 3.0 RESOURCE CHARACTERIZATION, IMPACT ASSESSMENT, AND MITIGATION

For each type of potential adverse impact identified through scoping, the DEIS will present the following:

- A characterization of existing conditions or situations placing the potential impact in context with the geographical project area and the proposed HSWF;
- An assessment of each impact with regard to its likelihood of occurring and its severity , using project specific information, existing research, special studies, and current regulations and public policy;
- Proposed mitigation measures. Mitigation costs and practicability will be weighed in the balancing required by SEQRA. Where applicable, both short-term and long-term impacts will be evaluated for each potential impact;
- A determination will be made for each impact relative to the anticipated level of significance, and where appropriate, mitigation measure to reduce impacts will be proposed;
- A description of adverse environmental impacts that can not be avoided or adequately mitigated;
- Any irreversible and irretrievable commitment of resources; and
- References for the information in each section, with emphasis on information from the following sources: New York State government agencies; peer reviewed professional journals; actual field studies in the project area and from similar existing installations in New York State.

## *3.0.1 Setbacks*

A pivotal issue in development of the HSWF is the minimum required setback of individual wind turbines from participating and non-participating property lines, roads, and residences. The Town of Sheldon Local Law 1-2003 establishes a minimum setback of one-and-a-half times the tower height or 750 feet, whichever is greater, from residences, any other habitable structure, any public highway, road or lot line except under a waiver for adjacent participating properties. The DEIS will assess the potential impact of the HSWF and will identify appropriate mitigation measures which may include greater setbacks that required by Local Law 1-2003.

## 3.1 Topography, Geology and Soils

Characterization

The DEIS will describe and characterize the topography, soils and geology in the project area. The characterization will be initially based on information from aerial photos, New York State Museum, New York State Geologic Survey, United State Geologic Survey, the Wyoming County Soil Conservation Service and existing studies in the area, including any data available from the Town of Sheldon. Based on that information, a program of investigation will be developed to establish the adequacy of the typical proposed foundation design and to identify required excavation technologies (including any need for blasting).

Specific impacts and mitigation measures are addressed in the sections on: Land and Land Use, Agricultural Impacts, Water Resources, and Public Safety.

## 3.2 Land and Land Use

### Characterization

The DEIS will include descriptions of existing landforms and land uses in the overall project area. Land use will be characterized by utilizing available GIS data, aerial photography, and field observations and measurements. This data will be portrayed as land use and land cover maps in the DEIS.

### Impacts

The DEIS will assess impacts, including but not limited to:

- Project area to be permanently reserved exclusively for HSWF operations, including wind turbine areas, access roads and support operations;
- Project area to be temporarily disturbed during construction;
- Potential impacts on steep slopes and hillsides;
- Potential impact on existing land use patterns and on future residential development and recreational opportunity; and
- Compliance with the Sheldon Comprehensive Plan.

### Mitigation

The DEIS will discuss potential mitigation measures that may include:

- Use of existing farm or logging roads for service roads;
- Re-use of topsoil on-site; and
- Mandatory setbacks from non-participating property lines and residences.

## 3.3 Agricultural Resources

### Characterization

The DEIS will describe and map:

- Existing agricultural land uses and agricultural districts;
- Existing topographical and geological features of the project area and surrounding region; and
- Compilation of information contained in USDA Soil Surveys (Wyoming County).

### Impacts

The DEIS will discuss impacts including, but not limited to:

- Soil compaction, operational limitations and access;
- Impact of construction of all project elements on topsoil;
- Impact of construction on erosion;

- Impact of construction on soil mixing;
- Long term impacts on topsoil and erosion;
- Impact on subsurface drainage systems.

Mitigation

Design, construction and operation of the HSWF will adhere to an Agricultural Protection Plan (APP) based on the New York State Department of Agriculture and Markets (NYSDAM) "Guidelines for Agricultural Mitigation for Windpower Projects." The Agriculture Protection Plan and the NYSDAM guidelines will be included as an attachment to the DEIS and will address all provisions of the above Guidelines, including:

- Monitoring for compliance with the APP;
- Design guidelines used to locate roads and wind turbines to minimize permanent disturbances to agriculture activities;
- Construction practices to be employed to minimize soil compaction, loss of topsoil, and mixture of topsoil and subsoil, including stockpiling of topsoil, regarding of topsoil to original depth, and negotiation with landowners of adequate workspace to accomplish these procedures;
- Post-construction measures to restore agricultural fields, including soil de-compaction and restoration of drainage patterns;
- Minimization of disturbance to subsurface drainage systems and mitigation of any such disturbance;
- Procedures to address concerns expressed by farm operators, including how funding for monitoring and restoration of agricultural lands will be provided; and
- Measures to ensure good communication between the project sponsor, the landowner, the utility company, and the NYSDAM concerning the type and location of all facilities required for the transmission line interconnection;

## 3.4 Water Resources

### *3.4.1 Surface waters:*

Characterization

The DEIS will:

- Identify and describe streams and surface waters within the project area and their uses and classifications.

Impact Assessment

The DEIS will assess impacts including, but not limited to:

- Potential impacts, including water quality and recharge, on streams and surface waters from project construction and operation; and
- Potential impacts on streams and surface waters from chemical spills.

Mitigation

The DEIS will assess potential mitigation measures that may include:

- Methods to prevent degradation to water and to meet permit requirements of Article 15 (Protected Streams) for stream crossings or disturbances to stream beds or banks related to access roads and electric lines;
- A spill response plan (description to be provided in the DEIS);
- Measures by which the project will meet the conditions of regulatory agency storm water permits, including:
    - Obtaining storm water permit for construction activities (disturbance exceeds one acre);
    - Development of a Storm Water Pollution Prevention Plan (SWPPP) in accordance with the State Pollutant Discharge Elimination System (SPDES) General Permit 02-01 for Construction Activities, NYSDEC Technical Guidance "Standards and Specifications for Erosion and Sediment Control" (August 2005), and NYSDEC Technical Guidance "Stormwater Management Design Manual";
    - Procurement of other permits required by General Permit 02-01; and
    - Obtaining a general permit for the operational phase of the project.

*3.4.2 Wetlands*

Characterization

The DEIS will describe wetlands in the project area, based on:

- Surveys of state and federal databases;
- Field reconaissance to verify the mapped data and to identify any additional wetlands that are not shown on available maps and databases;
- General wetland descriptions and maps including: location, size, and vegetative cover type;
- Identification of any unavoidable impacts to wetlands; and

Impact Assessment

The DEIS will assess impacts, including but not limited to:

- Precipitation during construction activities that could result in silt-laden runoff entering project area streams and wetlands.;
- Loss of wetland area due to construction of service roads, the electric lines and the 10-acre staging area;
- Crossing of NYS protected streams with access roads and electric lines; and
- Accidental spills and likelihood of impacting adjacent wetlands.

Mitigation

The DEIS will describe potential mitigation measures that may include:

- Siting of wind turbines, associated access roads, and subsurface utility lines to avoid wetlands whenever possible;
- Stream crossings via overhead lines or directional boring to minimize clearing along stream banks;
- Prohibition of trenching or use of heavy equipment in streambeds;
- Prohibition of ground disturbance within 50 feet of NYS protected streams;
- Restoration impacted wetlands to pre-construction conditions where applicable;
- Implementation of a Stormwater Pollution Prevention Plan and Erosion and Sediment Control Plan to minimize impacts during construction;
- No crossing of streams with heavy equipment;
- Replacement of wetland areas lost due to construction as required by state or federal law;
- Implementation of a spill response plan;
- If waters of the U.S. would be affected, procurement of a Determination of Jurisdiction from the U.S. Army Corps of Engineers (ACOE) and any permits required by the ACOE;
- If waters of the U.S. would be affected, a description of methods to be used to avoid or minimize impacts on streams;
- Siting of access roads, turbine foundations, and all other project components to avoid mapped and surveyed wetlands. In the event that wetlands cannot be completely avoided, these areas will be identified in the DEIS and methods for minimizing wetland impacts will be addressed in the soil erosion and sedimentation plan to be included in the DEIS; and
- If any construction is required in State-regulated wetlands, appropriate permits will be obtained prior to the start of construction. If the Project impacts any federal jurisdiction wetlands or waters, the project will obtain an ACOE Nationwide Permit.

*3.4.3 Groundwater:*

Characterization

The DEIS will describe groundwater resources in the project area, including:

- An evaluation of data available from the New York State Museum, New York State Geologic Survey, United State Geologic Survey and the Wyoming County Soil Conservation Service, existing studies, and onsite investigations. In addition, a survey of area will drillers will be conducted to obtain data on depth to groundwater (and water quality, if available). Provide mapped figures, if available, showing depth to groundwater table, direction of groundwater flow and public and private well locations;

- An evaluation of shallow groundwater (soil and near surface bedrock) conditions as identified in the geotechnical study conducted for the HSWF. The study will conduct geotechnical drilling at locations within each proposed wind turbine cluster.
- Prevalence of groundwater use for drinking water;
- Likelihood of occurrence of seasonal perched water; and
- Quality of existing groundwater for drinking water use as determined from publicly available records and information available from local well drillers, Wyoming County Soil Conservation Service and the Town of Sheldon.

Impact Assessment

The DEIS will assess impacts including, but not limited to:

- Potential impacts to groundwater flow, surface water recharge, and groundwater quality, based on the construction of turbine tower pads and foundations, access roads and collection systems, and potential blasting;
- Potential impacts to groundwater quality will be considered for short-term construction activities and long-term location of the towers; and
- Potential impacts to quality and quantity of private water supplies.

Mitigation

The DEIS will evaluate potential mitigation measures that may include:

- Relocation of wind turbines based identified potential impacts, if any; and
- Repair or replacement of impacted drinking wells, if necessary.

### 3.5 Wildlife and Habitat

Impacts to habitat will result primarily from construction of individual turbine sites, access roads and collection systems and can in turn, impact wildlife. Impacts to wildlife may also occur as a result of wind farm operation. Temporary and short-term impacts may result from construction activities and initial operation. Potential impacts to any State of Federal listed rare, threatened, or endangered plant or animal species will be discussed in the DEIS. Special attention will be given to avian and bat species due to potential for collision with wind turbines.

The New York Natural Heritage Program, NYS Department of Environmental Conservation – Division of Fish, Wildlife and Marine Resources, is considered a primary resource agency for this work. Specialized studies to be completed by the project sponsor will be conducted, including:

- Surveys for endangered and threatened species will be done in consultation with the NY Natural Heritage Program and NYSDEC Endangered Species Unit;

- Bat and avian studies and field collection will be designed and carried out in consultation with NYSDEC staff. It is understood that NYSDEC established a study outline entitled "Work Plan for 2005 Preconstruction Avian and Bat Studies" dated April 2005."
- Avian bird studies will be designed and carried out in consultation with NYSDEC staff
- Post-construction avian and bat mortality monitoring will occur as determined by the NYSDEC.

Habitats within and adjacent to the project area will be identified by:

- Aerial photographs and topographic maps showing predominant ecological communities;
- Identification of all NYDEC-designated Critical Environmental Areas and Audubon designated important bird areas; and
- Field studies, as described below.

A detailed report on all studies will be appended to the DEIS and a synopsis incorporated into the DEIS text.

*3.5.1 Flora and Fauna*

Characterization

- The DEIS will contain a description of the flora and fauna in the project area. A survey of flora and fauna will be conducted by a professional biologist will be conducted before construction begins. Typical habitats and plant communities will be characterized and depicted on habitat maps in the DEIS, including the identification of dominant plant species in each plant community. Based on habitats observed and an evaluation of geographic distribution maps, a list will be compiled of all mammal, reptile, and amphibian species likely to be present on the site.

Impact Assessment

- Plant Communities: The DEIS will quantify how many acres of each plant community will be impacted by construction for all project components, including turbine sites, foundations, roads, collection system, soil stockpile areas, and substation; and describe the degree of impact (from minimal to total removal); and
- Mammals, Reptiles, Amphibians and Fish: The DEIS will characterize any temporary displacement or permanent loss of mammal species and mortality of small mammals, reptiles and amphibians anticipated during construction and operation due to habitat loss, fragmentation, or degradation.

*3.5.2 Rare, Threatened And Endangered Species*

Characterization

- The DEIS will include an assessment of impacts to rare, threatened and endangered species likely to exist in the project area. Any such species will be identified in consultation with the USFWS, the NY Natural Heritage Program and the NYSDEC endangered Species Unit and confirmed, if needed, according to the specified time limits of determinations by each agency. Field surveys of any rare, threatened or endangered

species will be recorded. Habitats will be evaluated for the potential presence of rare, threatened and endangered species.

Impact Assessment

- The DEIS will characterize any temporary displacement or permanent loss of rare, threatened and endangered species anticipated during construction and operation due to habitat loss, fragmentation, or degradation.

*3.5.3 Avian species*

Characterization

Factors influencing the magnitude of impacts to migrating birds include: 1) the presence of a migration corridor resulting from geographic and landscape features; 2) wind speed and direction relative to the migration route; 3) weather conditions, including cloud cover, fog, rain pressure fronts, etc.; and 4) migratory behaviors of the bird species present in the project vicinity. Resident birds species may be impacted depending on the habitat types presenting the project area that are important for breeding and foraging for food.

- Information on breeding birds will be obtained from the NYS Breeding Bird Atlas and from field studies described below;
- Information on nocturnal songbird migration will be obtained from onsite field studies, described below, and also from other migration studies, local and regional bird banding stations and avian experts familiar with the project area;
- Sheldon Energy has initiated several field studies of avian and bat use of the Project Area. These studies have been designed and implemented after consultation with the NYSDEC, and the document the numbers of birds in and passing over the Project Area. Specific study plans and procedures are provided in Appendix B and include the following types of studies:
    - Breeding Bird Study. A field biologist will follow a prescribed survey route through the Project Area in the spring breeding season to identify and quantify resident and breeding birds present in the area.
    - Diurnal Migrant Study. A field biologist will visit the Project Area on multiple days during the spring and fall to identify activity and use of the area by hawks and other raptors that are known to migrate during the daytime.
    - Radar Study. Trained field technicians will operate marine radar equipment positioned in the Project Area that will count the number of and flight heights of migrating birds and bats flying through the area at night. Radar studies will be conducted during nighttime hours during the periods of expected peak spring and fall migration.
    - Post construction mortality: A post construction avian monitoring plan may be required by the NYSDEC.

Methods and results of the avian studies will be presented in reports that will be provided as appendices to the DEIS. The DEIS, with the avian study reports as appendices, will discuss:

- The seasonal occurrence of birds migrating through the Project Area;
- The potential for listed, endangered or threatened avian species to use the Project Area;
- The migration activity of birds through the Project; and
- Influence of climatic conditions on migratory activity.

Impact Assessment

The DEIS will assess impacts including:

- Potential impact of project operation on avian migration activities, considering observed species; numbers; flight patterns (including altitude); climatic conditions; regional geography; data from other studies (including mortality rates due to collisions at similar installations); data from nearby observing stations; turbine geometry , operating characteristics, and maximum tip height; and
- Any temporary displacement or permanent loss of migrating and locally breeding species anticipated during construction and operation due to habitat loss, fragmentation, or degradation.

Mitigation

The DEIS will discuss potential mitigation measures that may include:

- Surveys of breeding bird during construction, for two years following construction, and the fifth year after construction;
- Ongoing mortality studies as required by NYSDEC;
- Minimizing disturbance of mature forests;
- Modification to turbine locations, quantities, and/or heights;
- Maximize the distance between wind turbines and hedgerows;
- Paint wind turbines a color (off-white) readily visible to migrating and foraging birds and approved by the Federal Aviation Administration (FAA);
- Co-locate electric lines along service roads where practicable to minimize impacts to woodlands; and
- Minimize impacts to active agricultural and woodlands by locating service roads along existing farm roads and logging trails as much as possible.

### *3.5.4 Bats*

Characterization

The DEIS will describe:

- Data provided by the NYSDEC on bat fatalities from wind turbine collisions at US wind farms;
- Results of preliminary assessments of bat prevalence in the Project Area;

- Studies of numbers and species of migrating and resident bats in the Project Area. Specific study plans and procedures will be included as an appendix for the following:
    - o Radar Study. Results of the spring and fall radar studies performed as part of the avian assessment will be analyzed to identify the number of radar targets likely to be bats. This will provide information to assess bat migration rates through the Project Area;
    - o Ceilometer Observations. During the spring and fall conduct of the radar studies, the technician performing the radar studies will use a ceilometer to visually identify birds or bats in the immediate vicinity of the radar station. This will provide specific information on bat activity in the location of the radar station;
    - o Acoustic Monitoring for Resident Bats. In the summer, a period when no bat migrations are expected to occur, handheld acoustic detectors will be used to sample for possible bat echolocation calls at various locations in the Project Area judged to have the ecological conditions suitable for bat activity. Results will be analyzed to provide information on the numbers and species composition of bats resident in the Project Area;
    - o Acoustic Monitoring for Migrating Bats. During spring and fall seasons, periods expected to have peak bat migration activity, acoustic detectors will be installed at ground level and at elevations above ground level to continuously detect and record possible bat echolocation calls. Results will be analyzed to provide information on the number and species composition of bats migrating through the Project Area;

Impact Assessment

The DEIS will assess impacts including, but not limited to:

- Potential impact of project operation on bat migration activities, considering observed species; numbers; flight patterns (including altitude); climatic conditions; regional geography; data from other studies (including mortality rates due to collisions at similar installations); turbine geometry, operating characteristics, and maximum tip height;
- Available habitat for endangered and threatened species of bats;
- Any temporary displacement or permanent loss of migrating and locally breeding species anticipated during construction and operation due to habitat loss, fragmentation, or degradation.

Mitigation

The DEIS will discuss potential mitigation measures that may include:

- Modification to turbine locations, quantities, and/or heights
- Co-locate electric lines along service roads where practicable to minimize impacts to woodlands;

- Minimize impacts to active agricultural and woodlands by locating service roads along existing farm roads and logging trails as much as possible;
- Enhancement of habitat by installation of bat boxes or other measures; and
- NYSDEC requested post-construction mortality monitoring to assess whether further mitigation is indicated

## 3.6 Visual Resources

### *3.6.1 Aesthetics*

Characterization

The DEIS will characterize the existing conditions in accordance with the NYSDEC Policy Guide, "Assessing and Mitigating Visual Impacts" (DEP-00-2), including:

- An inventory of statewide resources, including properties listed or eligible to be listed in the National or State Register of Historic Places; here's an example
- Any other places in a category of aesthetic resources of statewide significance listed in the NYSDEC Policy Guide;
- A list of potentially sensitive receptors in the Project Viewshed based on the Comprehensive Plan, sections 2A, 2H and 2I and discussions with the Town Board, with brief descriptions and a map showing locations of these receptors. These will include:
    - Residences
    - Churches
    - Parks or recreation facilities
    - Schools
    - Hamlets
    - Main highway corridors
    - Beaver Meadow Audubon night sky study site
- A description of obstruction lighting required by the Federal Aviation Administration;
- Plans, elevations, and dimensions for the substation and associated equipment, as well as lighting needs and proposed landscaping;
- A description of how distance affects the apparent size and degree of contrast between an object and its surrounding. This will be divided into three categories – Foreground (0 to ½ mile), Middleground (1/2 mile to 3 miles) and Background (3-5miles to Horizon).

Impact Assessment

The DEIS will assess impacts by means including, but not limited to:

- An advanced 3-dimensional visualization model will be prepared using Arcview GIS software to prepare a "Zone of Visual Influence" map. This Viewshed map will be used to illustrate the areas in the Project Viewshed from which wind turbines could be visible. This map will consider the effects of topography, turbine height (blade at its highest point), existing vegetation, and turbine location, but it will conservatively address the

effects of viewer angle, structures, and weather. Evaluation of visual impacts within a five-mile radius is consistent with the NYSDEC's Policy "Assessing and Mitigating Visual Impacts" (DEP-00-2), dated July 31, 2000. However, the DEC states that a larger radius may be appropriate for large-scale projects. For purposes of the DEIS, the Viewshed will initially be considered to be the cumulative area defined by the sum of individual viewsheds of five-mile radii centered on each turbine. If the results of the visual simulations show the impacts to be significant at the cumulative five-mile limit, then the radius of the Viewshed will be expanded for this analysis.

- Visual simulations from up to twenty-four (24) viewpoints selected to cover the range of typical views, viewpoints expected to have the most observers, and viewpoints considered to be historically or culturally sensitive. At a minimum, viewpoints shall include:

    1. One simulation for each of the proposed 12 wind turbine clusters[1], made from a vantage point generally between ¼ mile to 1-½ miles from the nearest wind turbine in the cluster. These "cluster simulations" shall show typical views of each cluster and shall include at least three turbines from the cluster. Possible locations for the cluster simulations are listed below. The applicant shall provide at least one image from the locations with asterisks in the list below, but may substitute non-asterisked locations if the field photographer finds that other more typical vantage points exist.

        - Cluster A. As seen from the vicinity of the intersection of Maxon and Centerline Roads
        - Cluster B. As seen from the vicinity of Thomas Road, East of Maxon Road
        - Cluster C. As seen from the vicinity of the French Road in the Town of Bennington.
        - Cluster D. As seen from the vicinity of the intersection of Schwab and Humphrey Road.
        - Cluster E. As seen from the vicinity of the intersection of Perry Road and Route 77.
        - Cluster F. As seen from the vicinity of the intersection of Route 77 and Centerline Road, i.e., the Town Hall).
        - Cluster G. As seen from the vicinity of the intersection of Route 20A and Route 77.
        - Cluster H. As seen from the vicinity of the intersection of Bartz Road and Armbrust Road.
        - Cluster I. As seen from the vicinity of the intersection of Bartz Road and Centerline Road.

[1] The wind turbine clusters are defined in the project zoning applications submitted to the Town Board as of the date of this Scoping Document. They are identified by separate letter designations on the project layout map.

- Cluster J. As seen from the vicinity of the intersection of Route 20A and Route 77.
- Cluster K. As seen from the vicinity of Route 20A, west of Burrough Road.
- Cluster L. As seen from the vicinity of the intersection of Bloecher Road and Dutch Hollow Road.

2. At least two simulations showing the project as it would be seen from locations in the Town of Bennington.
3. An unspecified number of simulations to address the requirements set forth in the NYS DEC visual policy. This will include views from various sensitive receptors, landscape character areas, and distances (i.e. foreground, middleground and background). These simulations shall include, at a minimum:
    - A simulation taken from the property of the Byrnecliff Resort or the vicinity of where Humphrey Road runs through the Byrnecliff Resort;
    - A simulation including Saint Cecelia's Church and the wind turbines proposed to be located north of Centerline Road;
    - A simulation taken from the vicinity of the hamlet of Varysburg;
    - A long distance simulation, taken from a location on Route 20A west of the project area and 3-1/2 to 5 miles from the nearest wind turbine, and
    - A long distance simulation, taken from a location on Route 77 north of the project area and 3-1/2 to 5 miles from the nearest wind turbine.

- The visual simulations shall be prepared by taking photographs with a digital camera with a lens setting equivalent to 50mm. Position data (e.g. GPS data) shall be collected at the vantage point for each simulation so that wind turbines are accurately place simulated in the photos. To ensure that the resulting simulations achieve a higher degree of accuracy, Sheldon Energy will model the terrain of the Project Viewshed;
- A discussion accompanied with renderings and/or photographs of existing wind turbines that depict typical viewpoints at night, with FAA-required lighting, including any impacts on night sky study activities at Beaver Meadow Audubon Center; and
- Line-of-sight (cross section) renderings will be prepared, to show the extent of screening at a minimum of four sensitive locations in order to illustrate the effects of topographic relief and distance on viewsheds.

Mitigation

The DEIS will assess potential mitigation measures that may include:

- Uniform design of wind turbines and towers. A neutral, low-reflectivity finish to minimize contrast all buildings associated with the HSWF. However, paint must be an approved color (off-white) required by FAA regulations;

- Landscaping/fencing to partially screen HSWF buildings and help transition into the surroundings;
- Mandated FAA lighting at the lowest intensity required for pilot safety;
- Placing the majority of the electricity collection system underground;
- Utilizing existing farm or logging roads as service roads where possible;
- Design of tower heights within a cluster to be as similar as possible;
- Minimizing fencing, lighting, and access roads to minimize visual impact;
- Modification of turbine number and locations; and
- Setbacks from roads and ridge tops.

### *3.6.2 Wind Turbine Shadow Flicker*

Characterization

The DEIS will describe:

- Results of a shadow analysis to identify areas that could experience significant shadow flicker and the maximum number of hours per year and minutes per day that such shadow flicker could occur in those areas; and
- Identification of sensitive receptors.

Impact Assessment

The DEIS will assess impacts including, but not limited to:

- Health impacts described in professional, peer-reviewed journals, including any available information on dose-response relationship.

Mitigation

The DEIS will address potential mitigation measures that may include:

- Changes to siting, setback, turbine height, and hours of operation; and
- Providing shutters or blinds to affected residents.

## 3.7 Archaeological and Historical Resources

Characterization

The DEIS will include:

- Results and documentation of a review of the Office of Parks, Recreation and Historic Preservation (OPRHP) online resources and the archeological site files maintained by OPRHP to indicate whether there are previously recorded archeological sites within the project's Area of Potential Effect for archeology (APE);

- Documentation of consultation with OPRHP regarding the HSWF;
- Results from research using the OPRHP Sphynx model and site files maintained by the New York State Museum; and
- Results of a consultation with OPRHP on the requirements and/or findings of the CRA, the need for and methodologies of additional (if required) Phase 1B CRA's will be presented in the DEIS. Any reports prepared as the result of cultural resource investigations for the Project will be included as an appendix to the DEIS.

Impacts

The DEIS will describe possible impacts, including but not limited to:

- Construction activities that could potentially impact archaeological resources in areas identified as archeologically sensitive; and
- Indirect visual impacts on existing structures that are either listed on the National Register of Historic Places (NRHP) or eligible for listing on the NRHP.

Mitigation

The DEIS will discuss potential mitigation measures that may include:

- In the event a previously unknown archeological resource is discovered during construction, all work in the area will cease until representatives from the NYS OPRHP and a cultural resources company can be consulted about the appropriate action to take;
- The wind turbines and towers will be uniform in design and all buildings associated with the HSWF will have a neutral, low-reflectivity finish to minimize contrast. However, paint must be an approved color (off-white) required by FAA regulations;
- Landscaping/fencing will be used to partially screen HSWF buildings and help transition into the surroundings;
- Mandated FAA lighting will be the lowest intensity required for pilot safety and as consistent with requirements for avian impact;
- The majority of the electricity collection system will be placed underground; and
- Service Roads will utilize existing farm or logging roads where possible.

## 3.8 Noise

Characterization

The DEIS will discuss:

- Mechanisms by which noise will be generated during construction (short-term) and operation (long-term), as well as the factors that can increase or decrease perceived noise levels. The most likely sources of sounds from the proposed HSWF are sounds produced during construction of the wind farm from heavy-duty vehicles and equipment; sounds produced by the wind turbines during their operation; and sounds produced during routine maintenance and repair of turbines;

- Regulatory guidance. Note that Local Law 1-2003 requires that sound levels be at or below 50 dB at the boundary of all non-participating properties. However, the NYSDEC Program Policy "Assessing and Mitigating Noise Impacts" (DEP-00-1) states that

  > In non-industrial settings the SPL should probably not exceed ambient noise by more than 6 dB(A) at the receptor

  DEP-00-1 also states that:

  > Appropriate receptor locations may be either at the property line of the parcel on which the facility is located or at the location of use or inhabitance on adjacent property… The most conservative approach utilizes the property line. The property line should be the point of reference when adjacent land use is proximal to the property line. Reference points at other locations on adjacent properties can be chosen after determining that existing property usage between the property line and the reference point would not be impaired by noise, i.e., property uses are relatively remote from the property line.

  Accordingly, the DEIS will characterize noise impacts in accordance with the more conservative of the Town of Sheldon Town Law 2003 and/or DEP-00-01; and

- Ambient noise conditions will be measured, and a baseline established for calculating noise due to the proposed HSWF, according to the following procedure:

  1. An experienced noise expert will tour the Project Area, identify the local land uses and noise sensitive receptor locations within one mile of the planned turbine locations, observe the existing sound sources and acoustic environments in the community, and select potential locations for the ambient sound monitoring program.

  2. An ambient sound survey will be performed to characterize the existing sound environment in the community areas in the vicinity of the site. The ambient sound survey will include:

     a. Continuous measurements of the overall A-weighted sound levels made for up to seven days (weather permitting) at representative community locations near each of two project meteorological towers with automatic monitors. These measurements will provide data on the variations in average ambient sound levels in the community as a function of wind speed;

     b. Collection of ambient noise levels (A-weighted and octave band data) at the two continuous monitor locations, including the vicinities of each cluster and at other representative community locations during daytime and nighttime periods. These measurements will be made manually and will be accompanied by observations of the sources of the sounds collected;

     c. Collection of ambient low-frequency sound levels (C- weighted sound levels) in the vicinity of the various clusters;

d. All sound measurements will be made with instruments that meet the Type 1 provisions in ANSI S1.4 or IEC 651 and the provisions in ANSI S1.11 or IEC 225.

Impacts

The DEIS assess impacts, using methods including but not limited to:

- An experienced noise consultant will build a computer model using Cadna/A software to estimate the sound to be produced by the proposed project equipment under various wind conditions at locations within one mile of the proposed project. The widely-used Cadna/A program employs ray-tracing technology that accounts for various factors, including geometric spreading, atmospheric absorption, wind conditions, ground absorption, and terrain features;

- Sound power levels used to model the wind turbines will be based on vendor data that is supported by field testing of operating wind turbines;

- The DEIS will include a report summarizing the pertinent results of the ambient sound survey and sound modeling tasks. The report will document the ambient measurements, present the estimated sound levels for the wind farm operation in tabular and graphical format, provide comparisons for a range of wind speeds, and as indicated, identify potential noise mitigation methods for the project;

- The DEIS will identify and discuss the potential impacts resulting from low-frequency noise generators, if any, from each of the project components;

- Map(s) of the Project area showing contour lines of expected wind turbine (single and combined) sound levels due to operation, as well as increases above ambient levels, based on results of computer models for the proposed Project layout. Sound contour maps shall include locations of wind turbines, residences, and property boundaries; and
- Evaluation of expected noise levels due to construction and due to maintenance and repair of turbines after construction.
- Potential impacts from noise issues will be discussed in relation to the set backs required as part of Local Law 1-2003.

Mitigation

The DEIS will discuss potential mitigation measures that may include:

- Working with contractors to minimize the construction noise generated. Best management practices will be implemented such as turning off engines when not in use, maintaining equipment in good working order and using adequate engine covers and mufflers in order to minimize noise;
- Mandatory property line setbacks for non-participating permanent residences to mitigate noise. A specific setback distance will be recommended. Other setbacks to non-participating, non-permanent residences and property lines may be established; and
- Other mitigation measures as outlined in DEP-00-01.

### 3.9 Socioeconomics

Characterization

The DEIS will describe the existing economic conditions and resources, including:

- Pioneer and Attica Central School Districts;
- Police, fire, and emergency service providers serving the Project Area;
- Services of Employment (NYS Dept. of Labor data);
- Town of Sheldon tax base information;
- State and local tax or other financial incentives for development of wind farms;
- Proposed PILOT agreement between the Town of Sheldon and the applicant;
- Typical PILOT agreements in other New York communities with wind farm developments;
- Commercial businesses in the Project Area;
- Local demographics; and
- Tourism in the Town of Sheldon and Wyoming County.

Impacts

The DEIS will describe socioeconomic impacts, including:

- The nature and value of construction contracts expected to be available to local companies and estimates of the number of people to be employed during construction of the Project;
- Increased economic activity from the Project during and after construction;
- Permanent employment resulting from the Project;
- Payments to Town of Sheldon residents, compared to payments to non-residents;
- Estimates of total payments to be made to landowners and possible impacts of this revenue, particularly on dairy farm operators;
- Impact of tax subsidies and concessions (both State and local);
- Map(s) showing wind turbine locations by fire districts and school districts;
- Identification of all affected fire departments, the amount of tax revenue likely to be collected by the fire departments from the Project, and possible impacts of these taxes on the fire department budgets and taxing requirements;
- Identification of the school districts affected, the revenue expected to be received by school districts as a result of any Payment In Lieu of Taxes ("PILOT") agreements entered into by the Project, and possible impacts of any such payments on the school budget(s) and the schools taxing requirements;

- The revenue expected to be received by Wyoming County as a result of any PILOT agreements entered into by the Project, and the impact of any such payments on the County budget and the County's taxing requirements;
- The revenue expected to be received by the Town of Sheldon as a result of any PILOT and host community agreements entered into by the Project, and the impact of any such payments on the Town of Sheldon budget and the town's taxing requirements;
- Services that the Project may require of the fire departments, school districts, county, and town; and
- Impact on tourism, hunting, and snowmobiling.

Mitigation

The DEIS will discuss mitigation strategies, if needed, including:

- Compensation for any net economic losses; and
- Substation requirements for septic, sewer, lighting, and solid waste disposal services

## 3.10 Public Safety

Characterization

The DEIS will describe and evaluate the information available from published professional sources addressing:

- Ice throw and ice shedding;
- Tower collapse;
- Lightning strikes and related fire suppression design. Safety of any gas pipelines in the area should be assured in the event of a lightning strike;
- Electromagnetic fields impacts on human health, wildlife, and farm animals;
- Human medical and psychological effects due to noise and shadow flicker;
- Construction safety;
- Fire suppression methods to be used onsite and associated cleanup protocol;
- Worker safety during operational phase;
- Use of pesticides or herbicides during construction and operation;
- Separation distances of wind towers, turbines and interconnection facilities to electric transmission facilities and gas transmission pipelines. The location of gas transmission facilities should be documented in project mapping and gas facility operators should be contacted regarding facility location, design, and design depth-of-cover. Appropriate separation should be maintained and interference with cathodic protection systems avoided;
- Separation distance of wind towers from overhead electric transmission facilities in case of tower failure. Note that proposed turbine locations J1 and J2 are approximately 400 to 425 feet from an overhead 230 kV facility and proposed turbine location B1 is approximately 200 feet from the 230 kV facility;

- Potential hazards to local aviation. The location of any actively used air-fields and aircraft landing strips should be mapped in the DEIS. Note proposed turbine location G8 is approximately 800 feet from a mapped landing strip west of Route 77;
- Amounts of low frequency sound and infrasound (energy at frequencies below the threshold of human hearing) that could be generated by the project and the known health risk posed by any such emissions;
- The potential risk to the public from tower collapse and blade throw;
- Snowmobile collision risk posed by the Project and measures to be taken to mitigate this risk;
- Interference with landing of Mercy flights;
- Potential for increased grass fires near tower sites;
- Possibility of wind turbines effecting operation of electronic medical devices, such as pacemakers, possibly used by nearby residents; and
- Possible loss of insurance for neighboring property owners.

Impact Assessment

The DEIS will assess potential impacts to the items listed above. Potential impacts of pertinent public safety issues will be discussed in relation to the set backs required as part of Local Law 1-2003.

Mitigation

The DEIS will discuss potential mitigation measures that may include:

- Turbine siting, recommended fall zone and setback;
- Redundant safety systems on the equipment;
- Adherence to Federal, State and local codes;
- Icing detectors and automatic safety shutdown systems;
- Marking of underground electric lines with above grade and registrations of the underground electric lines locations with the state one-call service, Underground Facilities Protection Organization (UFPO);
- Project specific health and safety standards during construction. Provision of all appropriate personal protection to construction personnel;
- All proposed means of preventing public access to Project components (e.g., gates, fencing, signs, etc.);
- Emergency service providers available to respond to emergencies within the project site, along with the kinds of emergencies most likely to require the assistance of these personnel;
- Safety features and certification of the Project wind turbines, including maximum wind speeds that the turbines are designed to sustain;
- Marking and fencing off of towers to prevent snowmobile collisions;

- Adherence to NYSDEC standards for pesticide and herbicide application and neighbor notification;
- Establishment of safe separation distances from electric transmission and gas pipeline facilities;
- Establishment of safe separation distances from active airfields and aircraft landing strips;
- Establishment of procedures in a pre-construction meeting with local emergency providers;
- Review of any available local emergency preparedness plan(s) prior to construction and operation of the Project; and
- Compensation for increased insurance rates or loss of insurance for neighboring property owners, if necessary.

### 3.11 Roads

Characterization

The DEIS will include the following information:

- Road conditions and dimensions required for construction and project component transportation vehicles, e.g., pavement width, weight limits, and turning radii, etc.;
- Identification of the primary travel routes expected to be used by construction and Project component transportation vehicles, including a description of the physical and operational characteristics of these roads, e.g., width, gradient, existing traffic, number of lanes, surface materials and routing restrictions. Identify any engineering limitations affecting construction of the HSWF;
- Identification of the approximate types, number, weight and dimensions of construction vehicles, including those doing heavy haul of oversized equipment;
- Improvements to existing road systems required to accommodate construction vehicles (e.g., road widening or shoulder-clearing, bridge and culvert improvements, enlarged turning radii, etc.),A plan for documenting pre-construction road conditions and identifying and correcting construction-related road damage;
- A description of Project activities that could affect the State Highway System and how such activities will be managed in compliance with applicable NYDOT requirements;
- Identify any requirement for relocation of overhead utility wires, road closures or restrictions; and
- Describe the proposed terms of a road Repair/Improvement agreements between the Town of Sheldon and Sheldon Energy.

Impacts

The DEIS will describe impacts including, but not limited to:

- Impacts to local roads during construction, including road surface and shoulder damage, hazardous and non-hazardous substance spills, soil tracking and potential traffic congestion;
- Short-term, temporary and localized disruptions in traffic flow due to delivery of Project materials, especially wind turbine components, as well as road construction, underground cable installation, and commuting construction workers; and
- Transportation of turbine and tower components and construction materials would place relatively heavy loads on road surfaces; impact on habitat, soil, vegetation cover due to road construction and improvements.

Mitigation

The DEIS will discuss potential mitigation that may include:

- Best management practices would be implemented during HSWF construction to minimize spills and soil tracking;
- If improvements are required, road, culvert and intersection upgrades will be the responsibility of Sheldon Energy;
- Repairs to local roads due to movement of heavy equipment during construction will be the responsibility of Sheldon Energy;
- Scheduling of work to reduce duration and impact of any traffic delays;
- Delivery of large wind turbine components (blades, tower sections, and nacelles), construction equipment, and bulk materials (concrete, gravel, re-bar) will be planned and managed to minimize traffic impacts road damage. Permanent adverse impacts to existing roads will be avoided by making upgrades to roads prior to HSWF construction and by making all necessary repairs to roads following construction. It is expected that, following construction, all upgrades and resurfacing of existing roads will result in a net benefit to the project area's transportation system; and
- Balance visual and agricultural impacts due to road construction along ridge tops

### 3.12 Microwave Beam Interference

Characterization

The DEIS will identify the microwave beams that cross the HSWF. The DEIS will include a map and other information necessary to show existing microwave paths and demonstrate that these microwave paths will not be obstructed by wind turbines or other Project components.

Impacts

Wind turbines have the potential to interfere with microwave signals by obstructing line-of-sight microwave transmitters. Based on microwave path analysis, five wind turbine sites are located along four microwave paths and have the potential for signal interference.

Mitigation

The DEIS will discuss potential mitigation measures that may include:

- Using rotor blades constructed of fiberglass/carbon material and asynchronous (brushless) generators to reduce the potential for electromagnetic interference;
- Siting turbines to avoid point-to-point microwave transmission paths;
- If future complaints relative to degraded television reception due to project operation arise, mitigation actions could include adjusting existing receiving antennae's, install community step up signal antenna and related equipment, providing cable (if available), satellite reception, or other measures to the affected households who were utilizing a household antenna for their broadcast television reception needs as of the date of the FEIS.

### 3.13 Cell Phone Interference

Public concern has been raised regarding the potential for wind turbines to interfere with local cell phone coverage. The DEIS will describe experience at existing wind farms, published reports, and available expert testimony to assess the potential of the Project to affect local cell phone usage.

### 3.14 Air Quality

During construction, air-borne dust could be generated during road and foundation construction. Also, air emissions will be generated by construction-related traffic. The DEIS will discuss dust suppression techniques to be used during project construction, and it will compare the air emissions from Project construction to the potential offsets that could result from generating electricity from wind instead of from fossil fuels.

### 3.15 Blasting and Seismic Issues

Characterization

The DEIS will describe:

- Known seismic character of the project area, including frequency and intensity of seismic events;
- Known seismic impacts in the area;
- Federal and State regulations relevant to design for seismic stability for all project elements; and
- Relevant geotechnical information from onsite studies.

Impacts

The DEIS will discuss impacts related to blasting and seismic issues, including but not limited to:

- Health and safety of residents;

- Potential for property damage; and
- Potential for damage to roads, wells, and other public works.

Mitigation

The DEIS will address potential mitigation measures that may include:

- If blasting is required, the Project will adhere to all applicable regulations to blasting including New York State Department of Labor (NYSDOL) explosive handling regulations (12 NYCRR 39) and NYSDEC blasting/mining regulations and as outlined in the project Blasting Plan;
- Identification of appropriate fall zone for all turbines; and
- Design of all project elements for loading due to seismic or blasting events.

## 3.16 Property Values

Characterization

The DEIS will describe:

- Existing research and documentation from other windfarm projects; and
- Information from the Town Assessor and the New York State Office of Real Property Services will be collected to characterize the approximate per acre value of commercial, agricultural, residential and industrial (if any) properties within the Town of Sheldon.

Impacts

The DEIS will assess impacts including, but not limited to:

- Possible impact on property values;
- Possible impact on insurance rates;
- Impact of fall zones and setbacks on use of adjoining property; and
- Impact of wind turbines on future development of wind turbines or solar systems on adjacent property.

Mitigation

The DEIS will address potential mitigation that may include:

- Compensatory payments.

## 3.17 Decommissioning

Characterization

The DEIS will include:

- The expected operational lifetime of the HSWF;
- A discussion of potential scenarios in which the HSWF system or individual turbines would cease operations prior to the expected operational lifetime

Impacts

The DEIS will discuss impacts of decommissioning, including but not limited to aesthetic impacts, erosion and sedimentation impacts and public safety impacts.

Mitigation

The DEIS will discuss mitigation measures, including but not limited to:

- Partial or complete removal of wind turbine foundation/pedestals (if in place at time of abandonment);
- Removal of construction materials and debris and re-grading and re-seeding of the leased parcels in accordance with an approved "Decommissioning and Restoration Plan";
- Restoration of disturbed property restored to original conditions per approved decommissioning and restoration plan; and
- A decommissioning bond established prior to construction in order to decommission and restore the Project; this bond to be held by the Town Board or its successor agency.

## 3.18 Mandated FAA Lighting

Characterization

The Federal Aviation Administration (FAA) regulations will be utilized in order to identify the minimum lighting requirements. FAA procedures and approval requirements will be identified.

Impact Assessment

- Since the Project consists of multiple monopole structures over 200 feet in height, lighting per FAA requirements will be integrated and a visual impact may result; and
- Potential other impacts related to required lighting include air navigation, wildlife, and aesthetic/visual resources.

Mitigation

The DEIS will evaluate potential mitigation measures that may include:

- Following all requirements specified in the FAA's acknowledgment letter(s), including lighting specifications in accordance with the FAA Advisory Circular AC 70/7460-1; and
- Install red strobe-like L-864 lights on selected wind turbines to minimize the attraction to birds.

## 3.19 Energy Impacts

### Characterization

The DEIS will describe energy impacts, including but not limited to:

- Use of petroleum products such as gasoline, diesel fuel, lubricating oils, greases and hydraulic fluids for construction vehicles and equipment and lighting;
- Energy needed for construction of wind turbine components and associated facilities, electric lines components and transportation of these materials to construction sites;
- Amount of energy saved by recycling used components at the end of the turbine's service life;
- Amount of energy required for operation of the HSWF; and
- Amount of energy generated by the HSWF.

Given the uncertainties associated with the above type of analysis ("cradle-to-grave" analysis), if data for the specific turbines proposed is not readily available, results of studies from similar studies (e.g. from Denmark or elsewhere) may be used.

### Impact Assessment

The DEIS will assess the impacts, if any, associated with the above energy balance.

### Mitigation

The DEIS will identify all appropriate and applicable mitigation measures for any resulting impact identified above.

## 3.20 Rural Character

### Characterization

The DEIS will describe resources contributing to the existing rural character of the project area, including:

- Scenic character;
- Absence of industry; and
- Absence of noise

### Impact Assessment

The DEIS will assess impacts including but not limited to impacts identified in preceding sections:

- Visual impact of the complete project on the Town of Sheldon;
- Noise in the vicinity of individual turbine clusters.

## 4.0 ALTERNATIVES

Alternatives to be discussed in the DEIS include at a minimum:

- No Action
- Alternate project location
- Fewer turbines [Note that for projects under 80 MW production, no PSL Section 68 review would be necessary]
- Lower turbine height;
- Alternative turbines, and
- Alternate energy sources.

Information on the potential beneficial and adverse environmental and economic impacts associated with each option will be presented.

## 5.0 GROWTH INDUCING ASPECTS

The DEIS will identify and describe the potential growth inducing impacts of the project with respect to improvements made to the roadway network and public utilities.

## 6.0 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

The DEIS will identify and discuss any adverse environmental impact that cannot be avoided or adequately mitigated if the proposed project is constructed. The discussion will include an identification of both significant and moderate adverse impacts as applicable.

## 7.0 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The DEIS will identify the extent to which the proposed action will cause a loss of environmental resources, both in the immediate future and in the long-term.

## 8.0 APPENDICES TO ACCOMPANY DEIS

The following reports will be included as Appendices to the DEIS:

- Project Layouts
- Wind Turbine Information
- Agricultural Protection Plan
- Visual Impact Assessment
- Shadow Analysis
- Spill Response Plan
- Avian Study Reports
- Bat Study Reports
- Wetland Map(s)
- Agency Correspondence
- Noise Study
- Spill Response Plan