

Article 10 Preliminary Scoping Statement

Canisteo Wind Farm

Case 16-F-0205

Steuben County, New York

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I. Introduction

Canisteo Wind Energy LLC (CWE) plans to submit an Application to construct a major electric generating facility under Article 10 of New York's Public Service Law (PSL). Pursuant to the rules of the New York State Board on Electric Generation Siting and the Environment (Siting Board), applicants proposing to submit an application to construct a major electric generating facility under Article 10 must file a Public Scoping Statement (PSS) with the Department of Public Service (DPS) for review at least 90 days prior to filing an application. This document is the PSS for the Canisteo Wind Energy Center (the Project), a wind energy facility described in Section III.

As required by 16 NYCRR § 1000.5, Section IV of this PSS describes the content of CWE's planned Article 10 application (the Application). The PSS follows the outline of 16 NYCRR § 1001, "Contents of an Application." For every required exhibit to the application, the PSS describes how the Application will meet the requirements of 16 NYCRR § 1001.

II. Applicant

CWE is a Delaware limited liability company formed for developing, owning, and operating a wind powered wholesale generating facility in Steuben County, New York. Canisteo Wind Energy LLC is an affiliate of Invenergy Renewables LLC, (Invenergy), a power producer developing and operating utility-scale renewable energy projects including in the New York State energy market. In New York, Invenergy-owned energy projects operate under the supervision and regulatory authority of the New York State Public Service Commission (PSC) and the Federal Energy Regulatory Commission (FERC). Invenergy and CWE management offices are in Chicago, Illinois.

Invenergy has developed over 65 wind farms in the United States, Canada, and Europe including the following three New York wind farms:

- High Sheldon Wind Farm, 75 turbines in the Town of Sheldon, Wyoming County, NY
- Orangeville Wind Farm, 58 turbines in the Town of Orangeville, Wyoming County, NY
- Marsh Hill Wind Farm, 10 turbines in the Town of Jasper, Steuben County, NY

Invenergy provides wholesale electricity to the public using clean, renewable sources such as wind. This furthers the federal government's policy as articulated in 42 U.S.C. 9201 to "hasten the widespread utilization of [wind energy] systems," as well as the State of New York's renewable energy policy, which requires 50% of the State's energy to come from renewable sources such as wind by the year 2030.

CWE intends to construct, own, operate, and maintain all components of the Project, except for facilities in the interconnection switchyard which CWE expects will be constructed by the interconnecting utility.

III. Facility Description

Project Location

Figure 1 shows the regional Project location, preliminary Project Area and preliminary Study Area for the Project. The Project Area includes all tax parcels on which CWE expects to build Project facilities plus other parcels in the same area. As shown in Figure 1, the Project Area is an oblong area generally

oriented along a southwest-northeast axis and containing approximately 35,000 acres. The Study Area covers the Project Area and the areas of New York and Pennsylvania within 5 miles of the Project Area.

Project Configuration and Layout

The Project will have a maximum generating capability of 290.7 MW, which is the size of CWE's interconnection service request pending with the NYISO, with up to 127 wind turbines located on land leased from owners of private property located in the towns of Cameron, Canisteo, Jasper, Greenwood, Troupsburg, and West Union in Steuben County, New York.

Project components will include commercial-scale wind turbines, access roads, an electrical collection system including lines connecting the wind turbines to a Project Substation, meteorological towers, an operation and maintenance (O&M) building, and electrical interconnection facilities.

Electrical interconnection facilities will include an overhead 115 kV interconnection line running from the Project Substation to NYSEG's Bennett Substation, and upgrades to be built inside the Bennett Substation. Although, CWE has not finalized the location of the Project Substation, it anticipates the interconnection line will be longer than 10 miles and will therefore require licensing pursuant to Public Service Law Article VII.

Figure 2 is a preliminary Project layout showing 141 potential locations for wind turbines and their access roads. Of the 141 sites shown on Figure 2, no more than 127 will be used, and the final number could be as few as 85 depending on the turbine model CWE selects for the Project. CWE will select which sites to build based on several factors, including the generating capacity of the wind turbine model CWE elects to use for the Project and landowner decisions on whether to lease land to CWE. At this time, over 85% of the 141 wind turbine sites in Figure 2 are on land leased to CWE.

The locations of turbines and other facilities may be adjusted as part of the design process, and as a result, the Application could present a layout with fewer than 141 potential wind turbine sites.

Wind Turbines

CWE will select a wind turbine model for the Project based on several factors including energy production, price, availability, expected reliability and safety, and vendor support and guarantees. To provide customers increased energy production and efficiency, wind turbine vendors regularly introduce new models with longer blades and taller towers. Consequently, CWE must design the Project for turbines it expects will be commercially available and in use by its competitors when the Project begins construction, which may differ from the turbine models currently available. In its Application, CWE will propose a range of wind turbines that it expects to be suitable and available at the time of construction, and it will perform studies to bound the impacts from this range of turbines.

CWE expects the shortest and tallest turbines to be 453 feet and 586 feet.¹ The shorter turbine is the GE 2.3-116 turbine on an 80 m tower; a turbine with 116 m rotor diameter and 2.3 MW generating capability. The taller turbine is the GE 3.6-137 turbine on a 110 m tower; a turbine with a 137 m rotor diameter and 3.63 MW generating capability.

¹ The heights given are measured from the ground to the furthest reach of a blade, i.e., the "tip height."

IV. Environmental Setting

Topography

The primary physiographic province of Steuben County is the Allegheny Plateau section of the Appalachian Uplands. This province is a plateau dissected by streams, where rugged, rolling topography is characterized by steep valley walls and wide ridge tops that were smoothed by glacial action.² The Project Area is situated along the slopes and summit of Marsh Hill east of the confluences of numerous small creeks with Colonel Bills Creek, with elevations ranging between 2,200 and 2,300 feet above sea level.

Geology.

Bedrock underlying Steuben County formed during the Devonian period from deposits derived from the extensive Catskill Delta. These deposits of sandstones, shales, and siltstones are oriented southwest-northeast. The rocks are oldest in the northeastern part of the county around Keuka Lake and become progressively younger toward the southwest part of the county. The Project Area is situated on bedrock which affects the relief. Upper elevations are located on dominantly soft shale bedrock interspersed with sandstone and siltstone.³

Soils

The Project Area lies in an acidic soil region of the state, where the soils tend to be deep, moderately drained on glacial till over hilly terrain. These soils typically derive from shale, sandstone, and siltstone and have a high clay content. Acidity, steep terrain and associated erosion, along with somewhat poor drainage, remain the principal limitations to agriculture. Dairy farming accounts for much of the current land use.⁴ The predominant soil association is the Volusia-Mardin-Lordstown association.

Drainage

Documented streams in the Project Area include Talbot Creek, Dennis Creek, Colonel Bills Creek, Peak Creek, Bennetts Creek, Milwaukee Creek, Tuscarora Creek and Troups Creek, in addition to others. The northern portion of the Project Area drains into the Canisteo River, while the southern portion drains into the Cowanesque River.

Forest Zone and Vegetation

Most of Steuben County, including the Project Area, lies within the Oak- Northern Hardwood zone, which occurs in higher elevations away from the Great Lakes.⁵ This zone is not uniform, comprising of a variety of species, but dominated by beech, sugar maple, and yellow birch. Though not evenly distributed, various types of evergreens are abundant among the hardwoods in these areas, the most common of which are hemlock, white pine and white cedar. The number of hemlock trees was greatly reduced during the nineteenth century by lumbermen for the bark was a source of tannin. The direction of the slope

² French, Lewis M., John P. Wulforst, William A. Broad, Paul R. Bauter, and Richard L. Guthrie, 1978 Soil Survey of Steuben County New York. United States Department of Agriculture, Soil Conservation Service in cooperation with the Cornell University Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C.

³ Van Diver, Bradford B., 1985 Roadside Geology of New York. Mountain Press Publishing Company, Missoula, MT.

⁴ de Laubenfels, David J., Vegetation. In Geography of New York State, edited by John H. Thompson, Syracuse University Press, Syracuse, 1996.

⁵ De Laubenfels.

affects the trees predominant within a certain area; south-facing slopes support more oaks or an oak-hickory mix (due to more sunlight), while north-facing slopes support more northerly-predominant trees, such as elm, red cedar, and hawthorn as well as a variety of evergreens. The remainder of the county is in the Northern Hardwood zone. The Project Area is a mix of agricultural fields and woods.

V. Potentially Significant Adverse Impacts of the Project

The Application will discuss all potential impacts required by the Article 10 regulations. This section identifies potential impacts CWE expects will warrant the most analysis and measures CWE may proposed to avoid, minimize, and mitigate these impacts.

Noise

Operating wind turbines generate broadband sound that dissipates with distance from the wind turbine. CWE plans to minimize Project noise levels at year-round residences by using modern wind turbines with relatively low sound emissions and siting them sufficient distances from year-round residences to keep maximum noise levels below design goals. Exhibit 19 of CWE's application will report results of computer modelling for predicted Project sound levels and compare them to design goals set to minimize community complaints and to meet standards of such organizations as the World Health Organization.

Visual Impacts

The Project wind turbines will be large structures visible from most locations in the Project Area where viewers are not blocked by nearby trees or buildings. Exhibit 24 of CWE's application will analyze visual impacts and report results in visual impact analysis (VIA) report. To avoid the most significant visual impacts, CWE's VIA will identify visual recourses of statewide or other community significance for which it is appropriate to restrict views of the Project. CWE will minimize visual impacts by using turbines of a similar design, minimizing signage, and minimizing lighting to only that needed for safety and necessary functions.

Shadows

On sunny days, Project wind turbines will cast shadows, and these shadows can move if they occur when the wind turbine blades are rotating. If these rotating shadows pass over open windows, they can create alternating light intensities referred to as "shadow flicker." Exhibit 24 of CWE's application will present a computer analysis of shadow flicker potential that will estimate the number of shadow hours per year that are expected to occur at residences. Results can be used to adjust wind turbine locations to avoid or minimize shadow flicker affects, by reducing or eliminate the number of shadow hours at specific residences. During Project construction and operation, CWE will manage a complaint resolution program that will help CWE identify residences where regular shadow flicker may be an annoyance and consider mitigation such as screening that can minimize these impacts.

Bird Impacts

Wind turbines can impact birds during construction and operation. Exhibit 22 of CWE's application will present results of field surveys of Project Area bird use and presence of threatened or endangered bird species. Exhibit 22 will analyze expected impacts to birds from the Project and cumulatively from the Project and other projects in Steuben County. Proposed avoidance, minimization, and mitigation measures will depend on results of these studies.

Bat Impacts

Wind turbines can impact bats during construction and operation. Exhibit 22 of CWE's application will present results of field surveys to check Project Area bat use and presence of any threatened or endangered bat species. Exhibit 22 will analyze expected impacts to bats from the Project and cumulatively from the Project and other projects in Steuben County. Proposed avoidance, minimization, and mitigation measures will depend on results of these studies, but may include measures to feather wind turbine blades during low wind periods after dark and in the bat active season.

Streams and Wetlands Impacts

Construction of Project facilities will likely require crossing of streams or wetlands with access roads and electrical collection system cables. CWE will design the Project to minimize the number of such crossings and the area of resulting impacts. Exhibits 22 and 23 of CWE's application will include a comprehensive survey of wetlands and streams in the expected limits of disturbance and tables of temporary and permanent stream and wetland impacts CWE expects to result from the Project. Exhibits 22 and 23 will describe CWE's iterative design process used to avoid and minimize wetland and stream impacts. These exhibits will also list construction practices that CWE will employ to minimize those impacts that are not avoided.

VI. Information Needed for the Application

CWE is planning the following field studies that will inform analyses in the Application:

- Wetland and stream delineations;
- Bird and bat studies, including breeding bird surveys, large bird point counts, aerial surveys for raptor nests, raptor migration surveys, and bat surveys;
- Site characterization reviews to verify vegetation and habitat;
- Ambient noise surveys;
- Archeological surveys;
- Historical resource surveys;
- Preliminary geotechnical surveys;
- Visual resource surveys and photographs for visual simulations;
- Engineering walkdowns to support development of preliminary site plans;
- Aerial photography and topographic surveys;
- Local road surveys for structural limitations, clearance concerns, needs for intersection modifications, and conditions of road surfaces;
- On-site meteorological testing to verify the wind resource.

In addition to the above field studies, CWE is also planning the following analyses to support the Application:

- Electromagnetic field (EMF) studies; and

- Production modelling of New York's wholesale electric market.

VII. Alternative Locations

There are two significant constraints that render the consideration of “reasonable and available alternate locations” impractical for developers of utility scale wind projects. First, as expressly acknowledged in Section 1001.9(a), a private facility applicant need only examine locations under its control. The Applicant is a private company without eminent domain authority to procure alternative wind sites. Second, and more importantly, the development of a utility scale wind project requires the acquisition of sufficient control of a large amount of real property in a much larger land area with proven wind quality in an area that is receptive to hosting wind turbines and associated infrastructure. The number of suitable locations is finite and relatively small. Development starts with identifying an area with quality wind and relatively undeveloped land, then assessing the community's general receptivity and further assessing the landowners' willingness to negotiate options on the needed real estate. This is a very intensive process, the aim of which is to secure sufficient options to design a project of the size needed to make the project economical and financeable. There is no room in this process to acquire real estate control for alternative locations. Therefore, in developing a utility scale wind farm to the stage where sufficient information for initiating the permitting process has been collected, it is simply not practical to present alternatives for consideration. As a consequence, there are no “reasonable and available location sites for the proposed facility”. In contrast fossil-fuel projects that are subject to Article 10 requirements can be located on relatively small sites, with the siting constraints limited primarily to access to high pressure gas pipelines and high voltage electric lines. In such cases, even private applicants have some flexibility to present alternate locations.

Moreover, for New York to meet its renewable energy goals, New York may need to develop all locations with wind resources suitable for utility scale development. And, to be clear, CWE's affiliate, Invenergy Wind Development LLC, is developing other wind locations, but only to build projects at those locations in addition to this Project, not as alternatives to the CWE facility.

VIII. Economic Benefits

The Project will generate significant employment and regional spending during construction, and once operational it will provide annual and dependable revenue to local governments and landowners.

CWE is proposing to build the Project with financial assistance from the Steuben County Industrial Development Agency (SCIDA). Under this structure, it would enter into a payment-in-lieu-of-taxes agreement with SCIDA and host community agreements with the towns where wind turbines are installed. The table below summarizes CWE's preliminary estimates of the Project's economic benefits during Project operation.

Local Economic Benefits from Operation of the Canisteo Wind Farm

Description	Annual Estimate	20 Year Total
PILOT Payments	\$ 1,450,000	\$ 33,530,000
Host Community Agreement Payments	\$ 870,000	\$ 20,120,000
Fire District Taxes	\$ 140,000	\$ 3,240,000
Landowner Lease Payments	\$ 2,040,000	\$ 47,170,000

O&M (Payroll and Local Spending)	\$ 1,100,000	\$ 25,440,000
Total	\$ 5,600,000	\$ 129,500,000

Notes:

1. Assumes PILOT Rate of \$5,000/MW/year and host community agreement rates of \$3,000 per year
2. Assumes 1.5% annual escalation

IX. Environmental Benefits

The Project would be a new source of emission-free energy generation for New York State. CWE expects the Project will operate at an annual net capacity factor (NCF) of 32%. This means the Project, if built at the maximum expected generating capacity of 290.7 MW, would generate approximately 814,000 megawatt hours (MWh) of energy per year. This will be enough electricity to meet the average annual consumption of 75,000 or 113,000 households, based on average annual household electric consumption of 10.8 MWh for the U.S. and 7.2 MWh for New York State, respectively.⁶

Exhibit 6 of CWE's application will present results of dispatch modelling of New York's electric system with and without the Project, including estimates of how much air emissions would be reduced if the Project were built.

X. Environmental Justice

The New York State Department of Environmental Conservation (NYSDEC) provides map files of Potential Environmental Justice Areas it identifies as census block groups from the 2000 census (not 2010 Census data) with populations that meet one or more of the following thresholds:

- 51.1% or more of the population in an urban area reported themselves to be members of minority groups; or
- 33.8% or more of the population in a rural area reported themselves to be members of minority groups; or
- 23.59% or more of the population in an urban or rural area had household incomes below the federal poverty level.

No Potential Environmental Justice Areas are within the Project or Study Areas, but the following three are in Steuben County within 10 miles of the Project Area:

- Census Block Group ID: 361019609003 is located approximately 8.5 miles north of the Project Area. This area is in the City of Hornell. It's categorized as an urban area, and 2000 census statistics show 10.76% are minorities and 30.94% are below the federal poverty level.
- Census Block Group ID: 361019608002 is located approximately 9 miles north of the Project Area. This area is in the City of Hornell. It's categorized as an urban area, and 2000 census statistics show 5.42% are minorities and 31.76% are below the federal poverty level.

⁶ U.S. Energy Information Administration (EIA), 2014.

- Census Block Group ID: 361019609001 is located approximately 8.5 miles north of the Project Area. This area is in Steuben County in the city of Hornell (contiguous with census block 361019609003 above). It is categorized as an urban area, where 5.3% are minorities and 27% are below the federal poverty level.

Outside Steuben County, but within 10 miles of the Project Area, is the following Potential Environmental Justice Area:

- Census Block Group ID: 360039508002 is located approximately 9 miles west of the Project Area. This area is in Allegany County in the Town of Alfred. It's categorized as a rural area, and 2000 census statistics show 9.87% are minorities and 28.76% are below the federal poverty level.

XI. Application Contents

Exhibit 1. General Requirements

Exhibit 1 will present the information required by PSL 1001.1.

Exhibit 2. Overview and Public Involvement

Exhibit 2 will present the information required by PSL 1001.2, as more particularly described below.

- 1) Section 2.a will list the range of potential wind turbines CWE is considering for installation, their dimensions and noise emissions, and the dimensions and noise specifications that CWE will use in the visual, shadow, and noise studies to be included in the Application. These studies will use turbine specifications that will represent or exceed the maximum impacts of the actual turbine selected for installation.
- 2) Section 2.c will describe open house dates, advertising, attendance, and presentations.
- 3) Section 2.c will list issues or concerns that CWE learned of while implementing its PIP.

Exhibit 3. Location of Facilities

Exhibit 3 will present the information required by PSL 1001.3, as more particularly described below.

- 1) Section 3.a.1 will provide an overall project layout map (the Layout Map).
 - a) The Layout Map will use a USGS topographic background, and it will have a scale of 1:24,000 (i.e., 1"=2,000').
 - b) The Layout Map will show the Project Area boundary. The Project Area will bound all areas on which CWE proposes to install Project facilities and interconnection facilities.
 - c) The Layout Map will show proposed locations, assuming all potential wind turbine sites are used, of wind turbines, access roads, electrical collection system (ECS) lines, permanent

meteorological towers, the Project Substation, the POI Switchyard, the O&M Building, construction laydown yard(s), concrete batch plant(s), and the interconnection line.

- 2) Section 3.a.1 will provide maps of potential wind turbine locations assumed in conceptual alternatives that will be evaluated in Exhibit 9.
- 3) Section 3.a.5 will provide a map of the Study Area, which will be shown as all areas within five miles of the Project Area.
- 4) Section 3.c will contain a table listing the number of proposed wind turbine sites by county, town, school district, and fire district. It will also list the percentage of total wind turbine sites in each jurisdiction to facilitate scaling of economic benefits that may be paid based on assessed value in installed electric generating capacity.

Exhibit 4. Land Use

Exhibit 4 will present the information required by PSL 1001.4.

- 1) Section 4.a will provide a map of land cover in the Project Area using data from the National Land Cover Database.
- 2) Section 4.b will provide a map of major electric transmission lines in the Project Area, which for purposes of the map will be lines operating at voltages of 115 kV or more, plus the 34.5kV line that runs through the Project Area from the Bennett Substation to the West Erie Substation, passing through substations such as Canisteo, Marshall Warriner, Marsh Hill, Jasper, Troupsburg, Woodhull, South Addison.
- 3) Section 4.b will provide a map of high pressure natural gas pipelines and compressor stations in the Project Area.
- 4) CWE will contact local telecommunication companies to request information on major lines in the Project Area. Any lines identified will be described and mapped in Section 4.b.
- 5) The parcel boundary map required by 1001.4(c) will be drawn at a scale of 1" = 1,000 feet.
- 6) Section 4.n will provide a map based on aerial photography showing "the limits of proposed clearing or other changes to topography, vegetation, or man-made structures." This map shall be on a scale of 1:12,000 (i.e. 1"=1,000') and it shall be printed on multiple sheets D-size or larger.
- 7) Exhibit 4 will identify Project parcels that county records indicate are enrolled in 480-A forest management plans.

Exhibit 5. Electric System Effects

Exhibit 5 will present the information required by PSL 1001.5.

- 1) Section 5.f.2 will describe type certifications and other reviews manufactures and investors use to verify wind turbines are appropriate for their intended use. Specifics of reviews performed for CWE's turbines will not be available until the final turbine selection is made.

Exhibit 6. Wind Power Facilities

Exhibit 6 will present the information required by PSL 1001.6.

- 1) Section 6.b will provide a table showing for every turbine site the distance from the turbine center to the nearest:
 - a) Public road;
 - b) Year-round residence owned by a Project participant;
 - c) Year-round residence owned by a Project non-participant;
 - d) Seasonal residence owned by a Project participant;
 - e) Seasonal residence owned by a Project non-participant;
 - f) Commercial structure, as defined in Exhibit 19, Section 19.a;
 - g) Other structures, as defined in Exhibit 19, Section 19.a;
 - h) Outdoor public areas, as defined in Exhibit 19, Section 19.a;
 - i) Transmission line owned by a public utility, rural electric cooperative, or municipal cooperative;
 - j) Property line of a parcel owned by a non-participating landowner;
- 2) Section 6.d will describe CWE's method for estimating the net capacity factor for the project. Summaries of the wind resource assessment showing CWE's estimated net capacity factor will be provided as a business confidential appendix.

Exhibit 7. Natural Gas Power Facilities

The proposed facility will not consume natural gas, so no information will be provided in Exhibit 7.

Exhibit 8. Electric System Production Modelling

Exhibit 8 will present the information required by PSL 1001.8.

- 1) To meet the requirements of 1001.8 (a)(8), the report summarizing the electric system production model run for the Project will show the annual generation from co-generation, hydropower, nuclear and wind facilities in the NYISO zone in which the Project is located with and without the Project.

- 2) To comply with 1001.8(b), CWE will provide a spreadsheet with all key inputs used by its consultant to prepare the required electric system production model.

Exhibit 9. Alternatives

Exhibit 9 will present the information required by PSL 1001.9, as more particularly described below.

- 1) Sections 9.a, 9.b and 9.d will not present “reasonable and available alternate locations” nor analysis of such locations because CWE is a private company without eminent domain authority to procure alternative wind sites. In addition, the number of suitable locations for large-scale wind projects is finite and relatively small. It would be impractical to develop a set of landowners committed to a project at the same scale as CWE for that Project to only serve as a potential alternate site.
- 2) Section 9.c will describe the following conceptual alternatives and the trade-offs each involves:
 - a) Conceptual Alternative 1: Larger and Fewer WTG. This alternative will consider a project with the same generating capacity of the proposed Project but built using WTG with greater generating capacity of any of those proposed by CWE. As a result, this alternative will require installation of fewer WTG.
 - b) Conceptual Alternative 2: Smaller and More WTG. This alternative will consider a project with the same generating capacity of the proposed Project but built using WTG with lower generating capacity of any of those proposed by CWE. As a result, this alternative will require installation of more WTG.
 - c) Conceptual Alternative 3: Fewer Wind Turbines. This alternative will consider a project with the same WTG size as in the base Project, but with 25% fewer wind turbines, all spread over the Same Project Area. As a result, this alternative will have a lower generating capacity than the Proposed Project.
 - d) Conceptual Alternative 4: More Wind Turbines. This alternative will consider a project with the same WTG size as in the base Project, but with 25% more wind turbines, all spread over the Same Project Area. As a result, this alternative will have a higher generating capacity than the Proposed Project.
 - e) Conceptual Alternative 5: Smaller Project. This alternative will consider a project with the same WTG size as in the base Project, with half the number of wind turbines, and spaced approximately the same as the proposed Project. This alternative will have a half the generating capacity of the Proposed Project.
- 3) Section 9.e will present a table comparing the following information for the conceptual alternatives described in Section 9.c:
 - a) Energy generated (GWH/year),
 - b) Economic benefits to local governments and landowners,

- c) Area impacts (acres),
 - d) Cost of energy, estimated,
 - e) General comparisons of visual, noise and natural resource impacts.
- 4) The consideration of alternative energy sources in Section 9.g will be limited to a new solar generation facility designed to generate the same total annual energy as the proposed Project.

Exhibit 10. Consistency with Energy Planning Objectives

Exhibit 10 will present the information required by PSL 1001.10.

Exhibit 11. Preliminary Design Drawings

Exhibit 11 will present the information required by PSL 1001.11, as more particularly described below.

- 1) In response to the requirements of PSL 1001.11(a), Section 11.a will present:
- a) CAD drawings showing the sites for the Project Substation, POI Switchyard, O&M Building, and construction laydown yard drawn at scales of 1" = 50 feet or smaller (e.g., 1" = 30 feet) and including:
 - i) For facilities where CWE proposes to purchase the land on which the facilities will be built, the boundaries of the property to be purchased;
 - ii) Outlines of permanent stormwater features that CWE expects may be required.
 - b) Reference to drawings of the interconnection transmission line to be presented in Section 11.h.
 - c) CAD drawings of wind turbine areas (the Preliminary Site Plans), drawn on a scale of 1" = 100 feet and depicting:

The following permanent facilities and construction information:

- i) Edges of access roads, crane pads, wind turbine foundations, and wind turbine assembly areas.
- ii) Locations of buried cables.
- iii) Locations where CWE plans to install ECS cables by HDD.
- iv) Crane routes, i.e., routes other than Project access roads along which the contractor may elect to "walk" a main erection crane.
- v) Limits of ground disturbance expected during construction. Because the site is generally rolling terrain with few, if any, access roads or turbines located in areas of steep slopes or where significant cut and fill is expected, the limits of disturbance will be set using

engineering judgement and typical requirements for grading, topsoil stockpiling, and other construction activities, but not on three-dimensional grading contour calculations.

- vi) Edges of turning radius improvements on public roads.

The following stormwater management features:

- i) Locations of culverts.
- ii) Permanent storm water management features expected to be installed based on a preliminary design and engineering judgement.
- iii) Filter strip locations.

The following wetland, stream, and flood zone information:

- i) Delineated boundaries of wetlands and streams near Project components,
 - ii) Wetland impacts,
 - iii) FEMA 100-year flood zones.
- 2) Section 11.b will present a construction operations plan that describes the order of construction steps and how soil will be stockpiled in each step. This section will present a plan showing the soil stockpile plans when constructing a typical wind turbine foundation at the Project, but it will not present unique soil stockpiling plans for every wind turbine location. This section will present a drawing of a typical access road cross-section, showing widths for travel lanes, crane travel, buried cables, and soil stockpiles.
 - 3) In response to the 1001.11(c) requirement for grading plans, Section 11.c will refer to the excavation and grading descriptions in the construction operations plan and the preliminary site plans.
 - 4) In response to the 1001.11(d) requirement for a landscaping plan, Section 11.d will refer to a large format map showing limits of disturbance overlaid on aerial photography. Section 11.d will also present a vegetation management plan that will describe CWEs plans for mowing and trimming trees around wind turbines, along access roads, along ECS corridors, along the interconnection line, and around the Project Substation.
 - 5) In response to the 1001.11(e) requirement for a lighting plan, Section 11.e will describe the types, locations, and purposes of lights to be installed for FAA requirements, at wind turbine entrances, at the O&M building, at the Project Substation, and at the POI Switchyard.
 - 6) In response to the 1001.11(f) requirement for information on buildings and structures, Section 11.f will present:
 - a) dimensioned sketches of typical wind turbines being considered,

- b) elevations views of electrical yards typical of what CWE expects to be installed for the Project Substation and POI Switchyard,
- c) photos of a typical O&M building of the size and scale CWE anticipates be built as part of the Project,
- d) a dimensioned sketch of the type of permanent meteorological tower CWE anticipates building at the Project.
- e) Figures showing typical details for installation of the underground electrical collection system cables, including the width of the corridor required to support construction and typical spacings when more than one circuit runs through a corridor.
- f) Drawings of typical transmission line structures proposed for the interconnection line.

Exhibit 12. Construction

Exhibit 12 will present the information required by PSL 1001.12:

- 1) Section 12.a will describe CWE's general approach to staffing, quality control, and inspections, and it will include a sample checklist to be used to document conformance with typical quality control requirements.
- 2) CWE will provide its proposed environmental monitoring plan as an Appendix to this exhibit.

Exhibit 13. Real Property

Exhibit 13 will present the information required by PSL 1001.13, as more particularly described below.

- 1) In response to the 1001.13(a) requirement to provide a survey or map of parcels, landowners, etc. Section 13a will refer to a map provided in Exhibit 4, Section 4a with parcel boundaries, tax IDs, and landowner names as available from the county tax records as of the date approximately 6 months prior to application submittal.
- 2) In response to the 1001.13(a) requirement to show zoning information, Section 13a will refer to a zoning map provided in Exhibit 4, Section 4.d.
- 3) In response to the 1001.13(c) requirement to demonstrate the Applicant can obtain property rights necessary to build the Project, Section 13c will present a map shaded to show which parcels CWE has leased and those parcels where it is negotiating a lease or other agreement. CWE will seek to have this map treated as confidential information.
- 4) Section 13 will list the easements that CWE anticipates it will need to cross. The list will indicate the easement owner, easement purpose (e.g., town road, gas pipeline), and reason for the crossing (e.g., access road)

Exhibit 14. Cost of Facilities

Exhibit 14 will present the information required by PSL 1001.14.

Exhibit 15. Public Health and Safety

Exhibit 15 will present the information required by PSL 1001.15, as more particularly described below.

- 1) Section 15.e will discuss the potential for the Project to cause people with photosensitive epilepsy to experience new seizures from shadows from the wind turbines.
- 2) Section 15.e will reference and summarize reviews of peer-review literature on health effects of audible noise, low frequency noise, and infrasound from wind turbines.

Exhibit 16. Pollution Control Facilities

Because the Project will not require pollution control facilities, this exhibit is not applicable.

Exhibit 17. Air Emissions

Exhibit 17 will present the information required by PSL 1001.17, as more particularly described below.

- 1) Because normal operation of the project wind turbines will not involve combustion of fossil fuels, the table specified by Section 1001.17(c) is not applicable and will not be included in the Exhibit.
- 2) Section 17.d will discuss expected air emissions from emergency generators expected to be installed at the POI Switchyard and the Project Substation.
- 3) Because the project will result in so few air emissions, Section 17.d will not include assessments of potential concentrations of pollutants with and without the Project.
- 4) Exhibit 17 will include a discussion of potential road dust during Project construction and measures CWE will use to minimize such impacts.
- 5) Because the Project will not involve storage of ammonia, the requirements of Section 1001.17(e) are not applicable.

Exhibit 18. Safety and Security

Exhibit 18 will present the information required by PSL 1001.18, as more particularly described below.

- 1) Sections 18.a and 18.b will describe CWE's plans for access controls, electronic surveillance, security lighting, and setbacks during construction and operations respectively, but they will not include separate site plan drawings showing locations of these plans.
- 2) The emergency response plan provided in Section 18.c will not address community evacuation procedures for events caused by the Project, because unlike thermal generation plants, wind facilities do not generate community-scale hazards necessitating local evacuation.

Exhibit 19. Noise and Vibration

Exhibit 19 will present the information required by PSL 1001.19, as more particularly described below.

- 1) Section 19.a will present a map showing all potential sound receptors mapped within 1 mile of proposed wind turbines and the Project Substation. Of the potential sound receptors, CWE will provide sound-based design goals for two categories as discussed in Section 19.g, as clarified in item 5 below.
 - a. Potential sound receptors will be identified by review of aerial photography and windshield surveys, in consultation with local officials.
 - b. Potential sound receptors will be categorized as either (i) residence – year-round, (ii) residence – seasonal, (iii) dilapidated residence, (iv) commercial (which will include buildings occupied by people for business purposes, churches, schools, and public use buildings such as post offices, libraries, and town halls), (v) other (which will include barns, mechanics garages, sugar shacks, spring houses, or other structures that are not regularly occupied by people), (vi) outdoor public use areas (which will include cemeteries, parking areas for public lands).
 - c. The mapped sound receptors shall include at least one point for every resource identified as either listed or eligible for listing on the National Register of Historic Places.
- 2) In response to the requirements of PSL 1001.19 (d) to provide estimated noise from operation of the facility, Exhibit 19 will provide sound levels for every noise receptor that are calculated using the method referred to as the “maximum expected project sound level” by David Hessler in the NARUC Guidelines.⁷ These values will be referred to as the Expected Sound Levels or ESLs.
- 3) In response to the requirements of PSL 1001.19 (f) to provide results of noise modelling at property boundary lines, Exhibit 19 will present a noise contour map drawn at a scale of 1”=1,000 feet and showing:
 - a. Project wind turbines and main step up transformers.
 - b. ESL contour lines shown on 1 dBA increments between 35 and 50 dBA, with bolder lines for 50 dBA, 45 dBA, 40 dBA, and 35 dBA.
 - c. Parcel boundaries.
 - d. Sound receptors.
 - e. Extent of the map will include all areas within one mile of a Project wind turbine.

⁷ Hessler, David. 2011. Best Practices Guidelines for Assessing Sound Emissions from Proposed Wind Farms and Measuring the Performance of Completed Projects, prepared for the Minnesota Public Utilities Commission under the auspices of the National Association of Regulatory Utility Commissioners (NARUC), Hessler Associates, Inc., October 13, 2011.

- 4) In response to the requirements of PSL 1001.19 (f) to provide predicted noise levels at representative receptors, Exhibit 19 will present tables showing the following for all sound receptors within 1 mile of a proposed wind turbine or main step-up transformer as more particularly described below.
 - a. Ambient daytime, summer nighttime, and winter nighttime noise levels that CWE's noise expert considers representative for the receptor based on ambient noise measurements conducted in the Project Area.
 - b. Project operating L10 sound levels will be assumed to be equal to the ESL. (The ESL is the sound level calculated assuming turbines are at their maximum sound emission levels. This level only occurs when winds are relatively high. If wind speeds in the Project Area are not high enough for the turbines to be running at maximum noise levels for 10% of the time the L10 would be less than the maximum sound expected from the Project.)
 - c. Project operating Leq sound levels will be calculated using results of the computer modelling for each wind speed and the percent of hours each wind speed is expected to occur based on evaluation of data collected on-site.
 - d. Project operating L50 sound levels will be calculated from the computer model assuming wind turbines with noise levels closest to the P50 wind speed and then adjusting these up or down by the difference in A-weighted sound power levels of the turbines at the modelled wind speed and the P50 wind speed. The P50 wind speed will be the wind speed that can be expected to be exceeded 50% of the hours of the year based on meteorological data collected on-site.
- 5) Section 19.g will describe CWE's design goals which it has preliminary established as: (i) 45 dBA or lower ESL at all year-round residences on non-participating properties, and (ii) 48 dBA or lower ESL at all year-round residences on participating properties. CWE will have no design goals for receptors categorized as commercial, other, or outdoor public spaces, but expected sound levels at these receptors will be reported in Exhibit 19.
- 6) In response to the requirements of PSL 1001.19(h) to evaluate expected compliance with local laws, if the local law is written to require an L10 statistic for measuring compliance, Section 19.h will assume the ESL is a conservative estimate of Project L10 sound levels.
- 7) Section 19.k will evaluate potential community noise impacts, as more particularly described below.
 - a. CWE will evaluate potential for hearing damage by comparing predicted Project Leq noise levels to the 70 dBA guideline of the 1999 WHO Guidelines.⁸
 - b. CWE will evaluate potential for speech interference by comparing predicted Project noise levels to the 35 dBA guideline of the 1999 WHO Guidelines. For indoor speech, CWE will assume slightly open windows result in an attenuation of 15 dBA. For outdoor speech,

⁸ World Health Organization (WHO). 1999. Guidelines for Community Noise.

CWE will consider ambient noise levels during periods when winds are high enough for wind turbines to be operating at maximum noise levels.

- c. CWE will use the NARUC Guidelines⁹ to evaluate the potential for the Project to generate complaints. To support this evaluation, Section 19.k will report the number of sound receptors with ESLs that are: < 40 dBA, 40–41 dBA, 41–42 dBA, 42–43 dBA, 43–44 dBA, 44–45 dBA, and >45 dBA.
- d. Section 19.k will discuss the potential for Project operation to create airborne sound-induced vibrations that could generate annoyance or cause rumbles, vibration, or rattles in windows, walls, or floors of area buildings. This discussion will describe the applicability of Hubbard's Methodology, ANSI S12.9, and ANSI 12.2 for evaluating the potential impacts from airborne vibrations.

Exhibit 20. Cultural Resources

Exhibit 20 will present the information required by PSL 1001.20.

Exhibit 21. Geology, Seismology and Soils

Exhibit 21 will present the information required by PSL 1001.21, as more particularly described below.

- 1) Section 21.a will present a soils map prepared at a scale of 1"=2,000 feet. In addition to slopes, the map will show wind turbines, access roads, and cable routes.
- 2) The information required by PSL 1001.21 (b) will be shown on the site plans provided in Exhibit 11.
- 3) Section 21.c will present estimates of cut and fill volumes based on assumed depths of topsoil, subsoil, and rock and average excavation depths and areas expected for access roads, wind turbine foundations, wind turbine assembly areas, cable trenches, electrical yards, the O&M building site, and general construction area (e.g., the construction laydown yard, concrete batch plant).
- 4) Section 21.f will include a table of locations where cables installations by horizontal directional drilling (HDD) is anticipated. The table will identify the feature being drilled under, number of circuits, and approximate length of each bore.
- 5) Section 21.g will discuss in general, but not delineate in detail for every location, where topsoil and subsoil will be stockpiled at wind turbine sites, along access roads, and along cable trenching operations. The discussion will reference a typical figure showing where soils would be stockpiled at a wind turbine site when the foundation is being constructed.
- 6) Section 21.h will summarize the number of wind turbine sites where soils are rated for low, medium or high risk for concrete corrosion and steel corrosion as reported by the U.S. Department of Agriculture's Natural Resource Conservation Service Web Soil Survey (WSS).

⁹ Hessler, David. 2011.

- 7) Section 21.i will include a blasting plan and an estimate of the number of areas where CWE expects blasting may be necessary based on a preliminary geotechnical survey of select wind turbine locations.
- 8) Section 21.o will include a map of soils prepared at a scale of 1" = 2,000 feet.
- 9) Section 21.q will describe the locations and methods to be used in the final geotechnical survey that CWE will perform prior to construction.

Exhibit 22. Terrestrial Ecology and Wetlands

Exhibit 22 will present the information required by PSL 1001.22, as more particularly described below.

- 1) Section 22.b will analyze area impacts to vegetation using the land cover types mapped by the national land cover database. Impacts to each land cover type will be provided as construction impact area, permanent impact area, and permanent conversion impact area (i.e., areas that are currently forested but will be cleared for construction and then throughout operation will be mowed or periodically cut back to prevent it from becoming forested again.).
- 2) Section 22.h will estimate the cumulative impacts to birds and bats of the proposed Project and the other three projects operating in Steuben County as of the time of this PSS: Marsh Hill, Cohocton/Dutch Hills, and Howard.
- 3) Section 22.i will present maps of field-delineated wetlands for areas that are (i) within 250 feet of planned wind turbine locations; (ii) 100 feet wide along planned access road and ECS corridors; (iii) within 100 feet of planned areas for the Project Substation, POI Switchyard, O&M building, construction laydown yard, and concrete batch plant, if any; (iv) within 100 feet of any areas where road intersection modifications are expected. Due to layout adjustments during the Project design process, the wetland study corridor may include more areas than those described above and in facilities may not be centered in the surveyed corridors. For any areas that are within 500 feet of the planned limit of disturbance but not delineated in the field, the Application will show desktop-mapped wetland boundaries determined using topographic contours, aerial photography, soil maps, and experience from field surveys to delineate nearby areas.

Exhibit 23. Water Resources and Aquatic Ecology

Exhibit 23 will present the information required by PSL 1001.23, as more particularly described below.

- 1) Section 23.a.2 will present a map of wells using information available from the DEC. This is information DEC obtained from well drillers since 2001, and it does not include wells drilled prior to this date.
- 2) Section 23.a will present projected water use rates for Project construction, and it will compare these rates to levels for which DEC permits are required. Because Project water use rates are relatively low, Section 23.a will not analyze in detail the impacts of the Project's water use on water table in normal or drought conditions.

- 3) Section 23.b.1 will map perennial and intermittent streams identified by publicly-available data from the DEC. Wetland delineation maps will show locations of intermittent streams identified by CWE in its field delineations of the expected limits of disturbance.

Exhibit 24. Visual Impacts

Exhibit 24 will present the Visual Impact Assessment (VIA) required by PSL 1001.24, as more particularly described below.

- 1) Section 24.a.5 will refer to discussions in Exhibit 18 on FAA lights and in Exhibit 11 on other lighting.
- 2) Section 24.a.11 will refer to lists and discussion in the VIA report that will address visibility from visually-sensitive receptors, but not from all visual resources.

Exhibit 25. Effect on Transportation

Exhibit 25 will present the information required by PSL 1001.25, as more particularly described below.

- 1) Section 25.f will describe the status of FAA and Department of Defense (DoD), if any, airspace reviews. Depending on whether the Project potentially impacts DoD resources and depending on the status of DoD reviews at the time of application, this description might not include a statement that CWE has received a formal or informal DoD review.

Exhibit 26. Effect on Communications

Exhibit 26 will present the information required by PSL 1001.26, as more particularly described below.

- 1) Section 26.b will describe buried fiber optic, telephone, and television cables in the Project Area based on CWE questioning of companies that provide these services, if any, to residents of the Project Area.

Exhibit 27. Socioeconomic Effects

Exhibit 27 will present the information required by PSL 1001.27, as more particularly described below.

- 1) Section 27.e will present an evaluation of secondary economic employment and economic activity such as additional agricultural spending by participating landowners and profits from direct spending by the Project. This section will not address potential impacts to other electricity generators that may result from the Project's entry as a new competitor in New York's wholesale power markets.
- 2) Section 27.i will estimate the revenues to local taxing jurisdictions assuming structures and rates for host community agreements and payment-in-lieu-of-tax (PILOT) agreements that CWE believes are realistic based on CWE's most recent discussions on these agreements with the municipalities. The calculations will also make assumptions on the number of megawatts of

generating capacity to be installed in each jurisdiction. These assumptions will be clearly documented in Section 27.i or its appendix.

Exhibit 28. Environmental Justice

Exhibit 28 will present the information required by PSL 1001.28, as more particularly described below.

- 1) If a census block in the Project Area is identified as an environmental justice area, Section 28.a will describe whether and how, if at all, adverse impacts in the environmental justice area might differ from impacts in other areas and measures the applicant will take to avoid, minimize and offset any unavoidably disproportionate adverse impacts..

Exhibit 29. Site Restoration and Decommissioning

Exhibit 29 will present the information required by PSL 1001.29

Exhibit 30. Nuclear Facilities

This Exhibit 30 does not apply to the proposed Project.

Exhibit 31. Local Laws and Ordinances

Exhibit 31 will present the information required by PSL 1001.31.

Exhibit 32. State Laws and Regulations

Exhibit 32 will present the information required by PSL 1001.32

Exhibit 33. Other Applications and Filings

Exhibit 33 will present the information required by PSL 1001.33

Exhibit 34. Electric Interconnection

Exhibit 34 will present the information required by PSL 1001.34, as more particularly described below.

- 1) Sections 34.i and 34.j will present information known about the point of interconnection switchyard or terminal based on the System Reliability Impact Study (SRIS) performed by the NYISO and transmission Owner. More detailed design information on these facilities is typically developed as Part 1 of a class year study, and may not be available at the time of the application.

Exhibit 35. Electric and Magnetic Fields

Exhibit 35 will present the information required by PSL 1001.35, as more particularly described below.

- 1) Section 35.b will refer to aerial photographs of typical ROW sections and describe heights of structures and lines in the area.

- 2) Section 35.d will present electric and magnetic fields for the interconnection line carrying (i) the maximum load allowed per proposed interconnection limits, and (ii) the average load expected in a given year, calculated using the Project's approximate net capacity factor and the maximum generating output of the Project. Case for summer normal, summer emergency, winter normal, and winter emergency will not be used, as the ratings are not applicable for a privately-owned interconnection line.
- 3) Section 35.d.6 will only present calculated "base case" magnetic fields if the new interconnection line crosses or shares a ROW corridor of an existing transmission line operating at 115kV or more.

Exhibit 36. Gas Interconnection

The Project will require no interconnection to high pressure gas lines and thus this Exhibit is not applicable.

Exhibit 37. Back-up Fuel

Other than diesel fuel for the emergency generators, the Project will require no fuel or backup fuel. Thus, this Exhibit is not applicable.

Exhibit 38. Water Interconnection

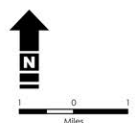
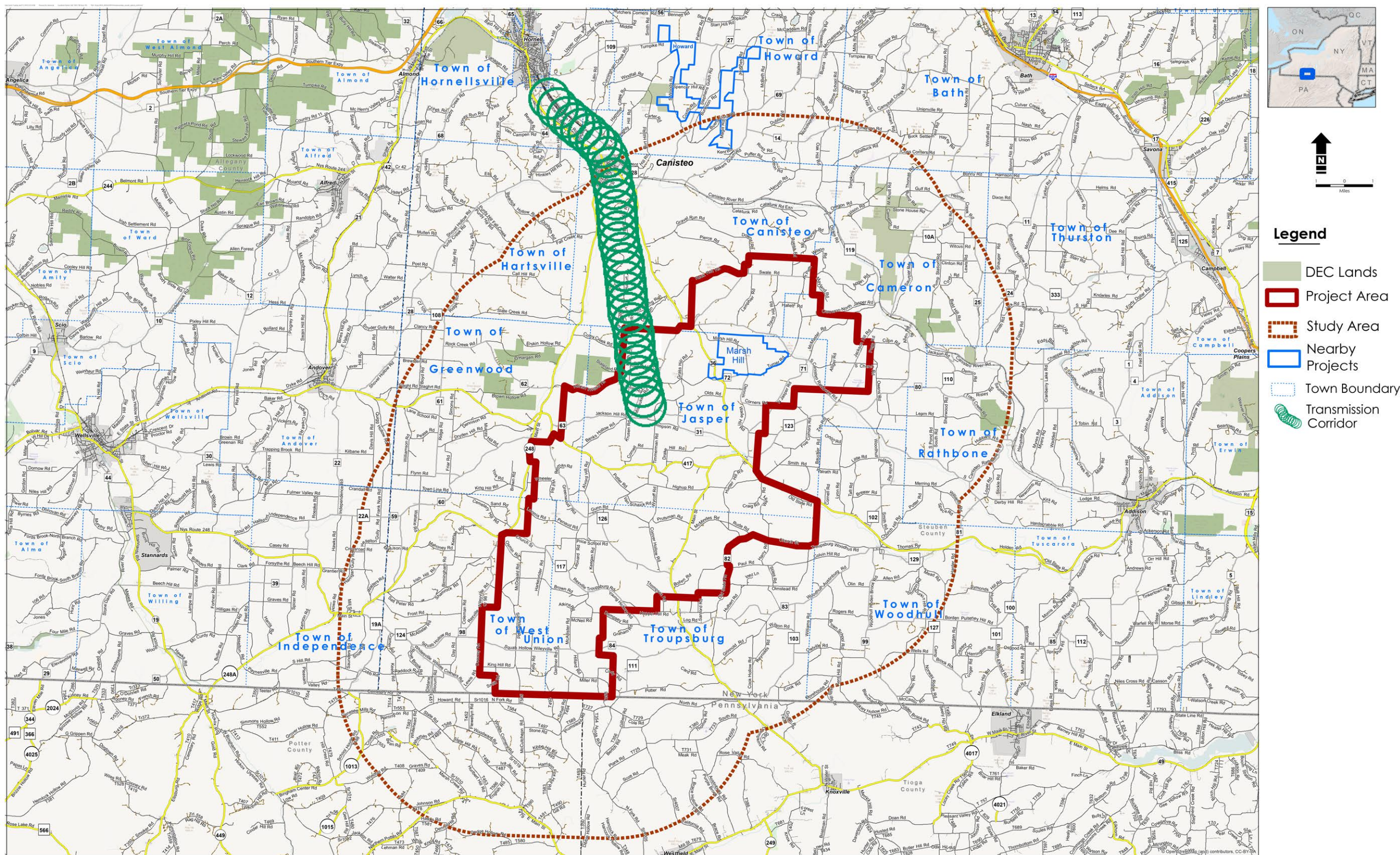
The Project will not interconnect to a public water system, and thus this Exhibit is not applicable. Construction needs for water will be discussed in Exhibit 23.

Exhibit 39. Wastewater Interconnection

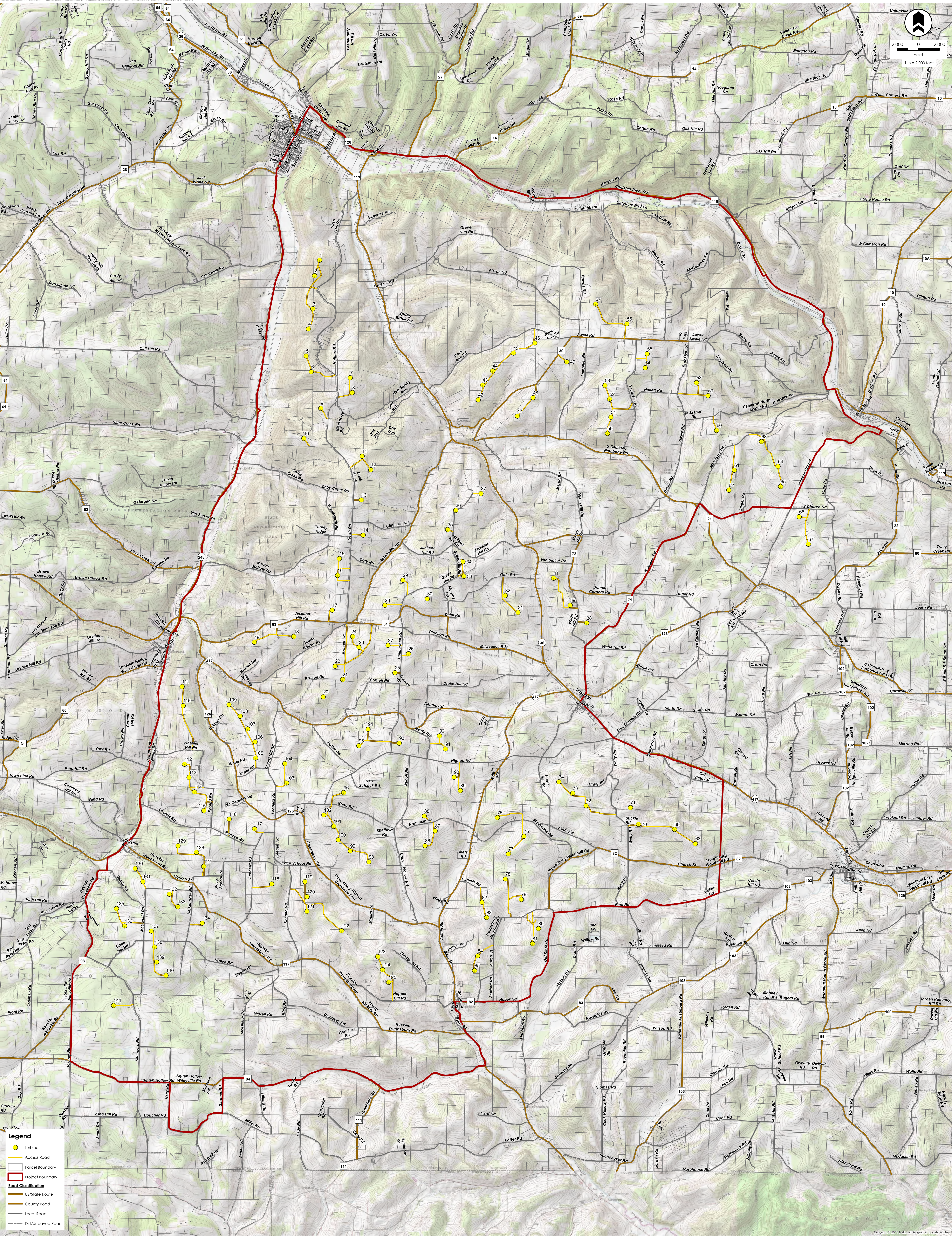
The Project will not interconnect to a public sewer system, and thus this Exhibit is not applicable. This exhibit will, though, describe the project's plans for an on-site septic system for O&M building effluent from the restroom and small amounts of wash water from staff showers and equipment cleaning.

Exhibit 40. Telecommunications Interconnection

Exhibit 40 will present the information required by PSL 1001.40.



- Legend**
- DEC Lands
 - Project Area
 - Study Area
 - Nearby Projects
 - Town Boundary
 - Transmission Corridor



Preliminary Layout

Canisteo Wind Farm | Steuben County, New York | Article 10 Case Number 16-F-0205