

STATE OF NEW YORK
BOARD ON ELECTRIC GENERATION SITING AND THE ENVIRONMENT

Application of Cape Vincent Wind Power, LLC, for a
Certificate of Environmental Compatibility and Public Need to
Construct an Approximately 200-285 Megawatt Wind Electric
Generating Facility in the Town of Cape Vincent, New York

Case 12-F-0410

PRELIMINARY SCOPING STATEMENT

EXHIBIT D

CAPE VINCENT WIND FARM

PRODUCTION/CURTAILMENT IMPACT STUDY

SCOPE OF WORK

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Cape Vincent Wind Farm (“Facility”) is to be located in Zone E and interconnected to the Lyme 115 kV Substation via line tap. It consists of two merged wind projects into a single facility consisting of NYISO interconnection queue positions, #166 for 79.5 MW and #207 for 210 MW for a total interconnected capability of 289.5 MW. The Power NY Act of 2011 established a process for the siting of electric generating facilities and repowering projects which is under The New York State Board on Electric Generation Siting and the Environment (“Siting Board”), which is in the Department of Public Service (“DPS”).

The New York State Article 10, primarily in 1001.8 Exhibit 8, has the requirement that the applicant for the Facility provide an assessment (“Production/Curtailment Impact Study” or “Study”) to estimate the effects of the Facility on emissions and the energy dispatch of existing must-run resources, such as wind, hydroelectric and nuclear facilities. The production modeling studies required in Section 1001.8 provide the information needed to determine energy deliverability issues without a separate energy deliverability study and will quantify and evaluate, among other things, the economic and physical impact of interconnecting the project to the electric system. A specific requirement is for the Siting Board to be able to determine if granting an Article 10 certificate to the Facility could result in backing down other valuable resources.

The purpose of the Production/Curtailment Impact Study is to support the Article 10 filing for the Facility by projecting the Facility’s impacts on the transmission system, emissions and the production of certain types of existing generating resources. The Production/Curtailment Impact Study will be included in the Exhibit 8 portion of the Article 10 filing for the Facility. Additionally, other portions of the Study will be used to support other requirements of the Article 10 filing for the Facility.

The Scope of Work provided herein is for DPS and Department of Environmental Conservation (“DEC”) review and comment and will be used to help qualify and select a consultant to perform the Study. It is CVWP’s expectation that any consultant selected to perform the Production/Curtailment Impact Study will be required to have:

- experience with electric system and production analyses of the NYISO system
- experience with a security constrained economic dispatch (“SCED”) model such as PROMOD IV™ production-cost simulation (“dispatch”) model and its complementary Transmission Analysis Module (or “PROMOD™/TAM”) or GEMaps in evaluating wind plant integration and curtailment
- a strong familiarity with Article 10 requirements

Please see the Appendix to this Scope of Work for a summary of Article 10 items to be addressed in the Production/Curtailment Impact Study.

Task 1: Development of Assumptions

A SCED has many underlying assumptions which impact the Study results estimating the effects of the Facility on emissions and the energy dispatch of existing must-run resources, such as wind, hydroelectric and nuclear facilities. A critical element of understanding these results is to define the assumptions in a manner meeting the requirements of Article 10.

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The Study will require a minimum of one year to adequately evaluate the impact of the Facility. This base model year scenario (“Base Scenario”) will coincide with the projected in-service year for the Facility. An “out-year” scenario, five years beyond the in-service year (“Out-Year Scenario”), similar to the out-year analysis conducted under a System Reliability Impact Study (“SRIS”), may also be generated, if required by DPS and/or DEC. Should such scenario be required, the Out-Year Scenario would be modeled to include higher-queued generation, in addition to existing plants.

Input assumptions will be supplied to DPS and DEC in a mutually agreeable digital format. It is expected that the assumptions at a minimum will include:

- Description of topology (e.g., portion of the eastern interconnect run in the Study)
- Identification of new generation
- Identification of generation retirements
- Load assumptions
- Power flow case model description
- New significant transmission additions
- Fuel price assumptions
- Emission assumptions
- Generator characteristics (e.g., average heat rate by unit type/size)
- Dispatch patterns for wind generation (Applicant will provide the hourly dispatch for the Facility)
- Key constraint/interface definitions
- Zone aggregate definitions
- Format of results (e.g., LMP on and off-peak by month)

CVWP would seek DPS and DEC approval of the assumptions prior to completion of the subsequent tasks.

Task 2: SCED Analysis

The Study will have both qualitative and quantitative components reflecting key system drivers such as the overall emissions to serve NYISO load with and without the Facility and the Facility location in relation to significant transmission expansion respectively.

The SCED analysis is able to calculate the economic and system flow impacts of the Facility integration over the course of a year. In addition to “known” transmission constraints, the analysis will identify constraints on the local system (the limiting elements) which may cause curtailment or congestion to the Facility or existing “must-run” plants, as defined in Article 10. The potentially limiting facilities will be monitored in the SCED under the relevant contingency conditions.

The SCED analysis will be run for the Base Scenario and, if required, the Out-Year Scenario with monitoring of selected inputs (to meet the requirements of 1001.8) on an hourly basis, including defined LMP nodes and aggregates, resource curtailment estimates, system emissions, transmission constraints, etc.

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Task 3: Reporting and Supplemental Review

The results of Task 2 will be compiled and reported in the manner agreed upon in Task 1 and per the requirements of 1001.8. Reporting will also include:

- Documentation of assumptions
- Description of the NYISO market as it relates to the analysis being completed
- Several other items which can be extracted from the model to meet other areas of the Article 10 requirements (as noted in the Appendix 1 to this Scope of Work, under 1001.10)

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**Appendix 1
Relevant Excerpts from Article 10 Regulation**

The consultant selected by CVWP to conduct the Production/Curtailment Impact Study will be required to fulfill the following requirements from Article 10:

1001.8 Exhibit 8: Electric System Production Modeling

Prior to preparing this exhibit, the Applicant shall consult with DPS and DEC to develop an acceptable input data set, including modeling for the Applicant's proposed facility and inputs for the emissions analysis, to be used in the simulation analyses.

Exhibit 8 shall contain:

(a) The following analyses that shall be developed using GEMAPS, PROMOD or a similar computer-based modeling tool:

- (1) estimated statewide levels of SO₂, NO_x and CO₂ emissions, both with, and without the proposed facility;
- (2) estimated minimum, maximum, and average annual spot prices representative of all NYISO Zones within the New York Control Area, both with and without the proposed facility;
- (3) an estimated capacity factor for the Facility;
[Applicant will provide]
- (4) estimated annual and monthly, on peak, shoulder and off-peak MW output capability factors for the facility;
[Applicant will provide based on 8760 wind pattern]
- (5) estimated average annual and monthly production output for the facility in MWhs;
[Applicant will provide based on 8760 wind pattern]
- (6) an estimated production curve for the facility over an average year;
[Applicant will provide based on 8760 wind pattern]
- (7) an estimated production duration curve for the facility over an average year; and
[Applicant will provide based on 8760 wind pattern]
- (8) estimated effects of the proposed facility on the energy dispatch of existing must-run resources, defined for this purpose as existing wind, hydroelectric and nuclear facilities, as well as co-generation facilities to the extent they are obligated to output their available energy because of their steam hosts.
[requires consultant to evaluate curtailment of applicable generators in region, including the Facility, and document all changes in dispatch for that generation with and without the facility]

(b) Digital copies of all inputs used in the simulations required in subdivision (a) of this section.

1001.5 Exhibit 5: Electric System Effects

C. A discussion of the benefits and detriments of the facility on ancillary services.

1001.9 Exhibit 9: Alternatives

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- C. A description and evaluation of reasonable alternatives to the proposed facility at the primary proposed location including alternatives regarding:

Timing of the proposed in-service date for the Facility in relation to other planned additions, withdrawals, or other capacity, transmission or demand reduction changes to the electric system;

1001.10 Exhibit 10: Consistency with Energy Planning Objectives

- c. A description of the impact the proposed facility would have on fuel diversity in the state;
- d. A description of the impact the proposed facility would have on regional requirements for capacity;
- f. A description of the impact the proposed facility would have on fuel delivery constraints;
- g. A description of the impact the proposed facility would have in relation to any other energy policy or long range energy planning objective or strategy contained in the most recent state energy plan;