

***Generation Interconnection
Combined Feasibility and System Impact
Study Report***

For

***PJM Generation Interconnection Request
Queue Position Y1-042***

Vineland 12kV

August 2012

Preface

The intent of a Combined Feasibility/System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs (cost allocation) with other projects will be identified in the Combined Report.

Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The Interconnection Customer may be responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

General

New Jersey Resources Clean Energy Ventures, Inc., the Interconnection Customer (IC), has proposed a 3.5 MWE (1.33 MWC; 3.5 MW MFO) solar powered generating facility to be located within the City of Vineland, Cumberland County, New Jersey. PJM evaluated the Y1-042 project's impact on the transmission system by studying it as a 3.5 MW injection into the Atlantic City Electric (ACE) system at the Vineland Municipal Electric Utilities' (VMEU) Central North 69kV substation. The project was evaluated for compliance with reliability criteria for summer peak conditions in 2015. The planned in-service date, as stated in the Attachment N, is September 1, 2014.

Attachment Facilities and local upgrades (if required) along with cost, schedule, and terms and conditions to interconnect Y1-042 will be specified in a separate two party interconnection agreement between VMEU and the Interconnection Customer. It is the Interconnection Customer's responsibility to contact VMEU directly to negotiate that interconnection agreement.

Point of Interconnection

Y1-042 will interconnect with the ACE transmission system through the VMEU distribution system and their existing Points of Interconnection with ACE (see Attachment 1).

Direct Connection Requirements

Transmission Owner Scope of Work

There is no direct connection scope of work for Atlantic City Electric Company.

Interconnection Customer Scope of Work

The Interconnection Customer assumes full responsibility for design and construction of all facilities associated with the Y1-042 generating station and the direct connection line on the IC side of the Point of Interconnection.

The IC will be required to install metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM. The requirements for this equipment are listed in Appendix 2, Section 8 of Attachment O to the PJM Tariff, as well as PJM Manuals 01 and 14D. Protective relaying and metering design and installation must comply with PHI.

Transmission Network Impacts

Potential transmission network impacts are as follows:

Generator Deliverability

*(Single or N-1 contingencies for the **Capacity** portion only of the interconnection)*

None

Multiple Facility Contingency

*(Double Circuit Tower Line, Line with Failed Breaker and, Bus Fault contingencies for the **Full** energy output.*

None

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

None

Short Circuit

No issues identified.

Stability Analysis

Not required due to project size.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. “Network Impacts,” initially caused by the addition of this project’s generation)

None

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. The costs identified below represent the total to complete the reinforcement, not necessarily this project’s cost. Actual cost allocations will be deferred until the System Impact Study is performed.)

None

Potential Congestion due to Local Energy Deliverability

(PJM also studied the delivery of the energy portion of the surrounding generation. Any potential problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with Network Upgrades to eliminate the operational restriction at their discretion by submitting a Transmission Interconnection Request. Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full deliverability for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which analyzes all overload conditions associated with the identified overloaded element(s). As a result of the aggregate energy resources in the area, the following violations were identified:

These are **not** required reliability upgrades.

None

Attachment 1

