Generation Interconnection Combined Feasibility/System Impact Study Report

For

PJM Generation Interconnection Request Queue Position Y2-100

Otter Point 34.5 kV

March 2013

Preface

The intent of the 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 with other projects may be identified in the Feasibility Study, but the actual allocation, if any, is included in the System Impact Study.

The Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs associated with them will be addressed when seeking an Interconnection Agreement as outlined below. Developer will also be responsible for providing and installing metering equipment in compliance with applicable PJM and Transmission Owner standards.

General

Eastern Landfill Gas, LLC, the Interconnection Customer (IC), is an existing landfill gas generating facility located in Whitemarsh, Maryland. The installed facilities will have a total capability of 4.0 MW with 4.0 MW of this output being recognized by PJM as capacity. The facility is currently in service and is requesting CIRs. **This study does not imply a Baltimore Gas and Electric commitment to any in-service date.**

Point of Interconnection

Y2-100 is currently interconnected to the BGE distribution system via a tap of 34 kV feeder 33845 out of Otter Point substation.

Cost Summary

The Y2-100 project will be responsible for the following costs:

Description	Total Cost
Transmission Owner facilities	$ 0
Allocation for Transmission Upgrades	$ 0
Total Costs	**$ 0**

Transmission Owner Scope of Work

No changes are required to support this request for capacity rights.

Presently, the transfer trip between Eastern Sanitary Landfill and BGE's Otter Point Substation is via Verizon line between Eastern Sanitary and BGE's Perry Hall Service Center and BGE fiber between Perry Hall and Otter Point. The Verizon line has caused communications problems which causes the landfill to restrict export back into the system.

To improve the transfer trip communication to customer installed/owned fiber between Eastern Sanitary and BGE's White Marsh Service Center and BGE communication to Otter Point would require the installation of approximately 10,000 ft of fiber cable by the customer. To accommodate the fiber, new terminal equipment would be required at White Marsh and Eastern Sanitary, but this is minor in comparison to the fiber costs.

Revenue Metering and SCADA Requirements

PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Sections 24.1 and 24.2.

BGE Requirements

The Interconnection Customer will be required to comply with all BGE Metering and Telecommunication Requirements. These requirements may be found within the "Baltimore Gas & Electric Transmission Planning Procedure, TAM-I-01, Facility Interconnection Requirements" document located at the following links:

http://www.pjm.com/planning/design-engineering/to-tech-standards.aspx

Network Impacts

The Queue Project #Y2-100 was studied as a 4.0MW (Capacity 4.0MW) injection at the OTTRPT-1 34.5 kV substation in the BGE area. Project #Y2-100 was evaluated for compliance with reliability criteria for summer peak conditions in 2016. Potential network impacts were as follows:

Contingency Descriptions

The following contingencies resulted in overloads:

None.

Generator Deliverability

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

None.

Multiple Facility Contingency

(Double Circuit Tower Line contingencies were studied for the full energy output. The contingencies of Line with Failed Breaker and Bus Fault will be performed for the Impact Study.)

None.

Short Circuit

(Summary of impacted circuit breakers)

New circuit breakers found to be over-duty:

None.

Contributions to previously identified circuit breakers found to be over-duty:

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.

Steady-State Voltage Requirements

(Summary of the VAR requirements based upon the results of the steady-state voltage studies)

None.

Stability and Reactive Power Requirement for Low Voltage Ride Through

(Summary of the VAR requirements based upon the results of the dynamic studies)

None.

New System Reinforcements

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

None.

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)

None.

Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any 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 Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

None.

Attachment 1

System Configuration