Generation Interconnection Combined Feasibility/System Impact Study Report

For

PJM Generation Interconnection Request Queue Position AB2-124

White Rock 34kV

May 2017

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

SoCore SE Development LLC, the Interconnection Customer (IC), has proposed a solar generating facility located in Howard County, Maryland. The installed facilities will have a total capability of 5.0 MW with 1.9 MW of this output being recognized by PJM as capacity. The proposed in-service date for this project is August 31, 2016 and is being reviewed. **This study does not imply a BGE commitment to this in-service date.**

Attachment facilities and local upgrades (if required) along with terms and conditions to interconnect AB2-124 will be specified in a separate two party Interconnection Agreement (IA) between BGE and the Interconnection Customer as this project is considered FERC non-jurisdictional per the PJM Open Access Transmission Tariff (OATT). From the transmission system perspective, no network impacts were identified as detailed below.

Point of Interconnection

AB2-124 will interconnect with the BGE distribution system via the White Rock feeder 33653

Cost Summary

The AB2-124 project will be responsible for the following transmission system costs:

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

Transmission Owner Scope of Work

Description -

The Interconnection Customer is looking to interconnect a 5MW solar facility on White Rock feeder 33653 .

High Level Scope of Work -

Distribution

- ✓ Install underground pole with 600 A Load interrupter switch and extend 750 AL cable to customer.
- ✓ Additional protection upgrades may be required.

Substation

Note : If the developer moves forward with the project, BGE would need to complete a Facilities Study to determine if metering upgrade is necessary.

Protection

Note : If the developer moves forward with the project, BGE would need to complete a Facilities Study to determine the coordination between the customer equipment and BGE.

Project Schedule-

- ✓ The upgrades will take an estimated **6 -8 months** to complete. This takes into account work associated with pre engineering all the way through to construction. Also, please note that this time is dependent on the availability of outages. The construction timeline will be better defined during the Facilities Study.

Project Cost -

The estimated cost for the upgrades and associated work is approximately **$320,000.** The cost will get refined as we go through the phases.

Next steps -

To continue the process, the developer is required to submit a BGE level 4 interconnection application and a service extension application. The contractual costs associated with the extension will be developed from the service extension application.

Please remember to apply directly to BGE for interconnection and for electric distribution extension. A level 4 application for each location shall be submitted to the generator-apply@bge.com mailbox. You can find the application on line at the following link: https://www.bge.com/MyAccount/MyService/Pages/ApplyingforInterconnection.aspx Go to Choose An Application, and select Level 4. Please note the service address for each project and the PJM queue number on each of the applications.

You will also need to apply for the electric service extensions for each location. The service request application can be found at the following link: https://www.bge.com/MyAccount/MyService/Pages/ServiceRequests.aspx

Once the electric service extension applications are received, they will be processed, and you will be notified of the next steps in the process which include a detailed design of the extension and a detailed contractual cost analysis.

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. 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.

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 AB2-124 was evaluated as a 5.0 MW (Capacity 1.9 MW) injection at the White Rock 34.5kV substation in the BGE area. Project AB2-124 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AB2-124 was studied with a commercial probability of 100%. Potential network impacts were as follows:

Summer Peak Analysis - 2020

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

None

Multiple Facility Contingency
(Double Circuit Tower Line, Fault with a Stuck 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
(Summary of impacted circuit breakers)

No impacts to the transmission system

Attachment 1

System Configuration