

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

for

***PJM Generation Interconnection Request
Queue Position AE2-070***

“White Rock 34 kV”

July 2019

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.

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

SED PJM Holdings LLC, the Interconnection Customer (IC), has proposed a 4.0 MW Energy (1.7 MW Capacity) solar generating facility to be located near West Friendship, Howard County, Maryland. PJM studied the AE2-070 project into the Baltimore Gas and Electric Company (BGE) system at the White Rock 34.5 Substation (PSSE bus # 221378) and evaluated it for compliance with reliability criteria for summer peak conditions in 2022. AE2-070 was studied with a commercial probability of 100%. The planned in-service date, as requested by the IC, is March 2, 2020. This date may not be attainable due to required PJM studies and the Transmission Owner's construction schedule.

As this project is considered FERC non-jurisdictional per the PJM Open Access Transmission Tariff (OATT), attachment facilities and local upgrades (if required) along with terms and conditions to interconnect AE2-070 will be specified in a separate two party Interconnection Agreement (IA) between BGE and the Interconnection Customer. It is the Interconnection Customer's responsibility to contact BGE directly to procure that IA.

From the PJM transmission perspective, no network impacts were identified as detailed in the "Network Impacts" section below.

Queue Number	AE2-070
Project Name	WHITE ROCK 34 KV
Interconnection Customer	SED PJM Holdings LLC
State	Maryland

Queue Number	AE2-070
County	Howard
Transmission Owner	BGE
MFO	4
MWE	4
MWC	1.7
Fuel	Solar
Base case Study Year	2022

Point of Interconnection

Tap of the BGE 34 kV distribution circuit at property on Frederick Rd. POI is 5 miles from White Rock substation at coordinates 39°18'34.5"N 76°58'44.8"W.

Cost Summary:

The **AE2-070** project will be responsible for the following costs:

Description	Total Cost
Attachment Facilities	To be provided in the IA
Direct Connection Network Upgrades	\$ 0
Non Direct Connection Network Upgrades	\$ 0
Total Costs	To be provided in the IA

In addition to the costs for the physical interconnection point above, the **AE2-070** project may be responsible for a contribution to the following costs for transmission reinforcements:

Description	Total Cost
New System Upgrades	\$ 0
Previously Identified Upgrades	\$ 0
Total Costs	\$ 0

BGE Scope of Work

Scope, cost, and schedule will be provided in the two-party Interconnection Agreement between the Interconnection Customer and BGE.

BGE Analysis

BGE will provide the load flow and short circuit results from their lower distribution voltage analysis as part of the two-party Interconnection Agreement. Local network impacts will be identified along with any required reinforcements.

BGE Interconnection Requirements

The proposed interconnection facilities must be designed in accordance with the BGE “Exelon Utilities Transmission Facility Interconnection Requirements” document:

<http://www.pjm.com/-/media/planning/plan-standards/private-ce/exelon-utilities-transmission-facility-interconnection-requirements.ashx?la=en>

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 Metering Requirements

The Interconnection Customer will be required to comply with all BGE Revenue Metering Requirements for Generation Interconnection Customers as outlined in the link below. The Revenue Metering Requirements may be found within the BGE “Exelon Utilities Transmission Facility Interconnection Requirements” document located at the following link:

<http://www.pjm.com/-/media/planning/plan-standards/private-ce/exelon-utilities-transmission-facility-interconnection-requirements.ashx?la=en> Network Impacts

Summer Peak Load Flow Analysis - 2022

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

Delivery of Energy Portion of Interconnection Request

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. 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 will study all overload conditions associated with the overloaded element(s) identified.

None

Short Circuit

(Summary of impacted circuit breakers)

No issues.