Generation Interconnection

Feasibility Study Report

for

Queue Project AF2-416

BERGEN 26 KV

10 MW Capacity / 10 MW Energy

July 2020

Table of Contents

1 Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is PSEG.

2 Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. Cost allocation rules for network upgrades can be found in PJM Manual 14A, Attachment B. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Feasibility 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 may be included in the study.

3 General

The Interconnection Customer (IC) has proposed a Storage generating facility located in Hudson County, New Jersey. The installed facilities will have a total capability of 10 MW with 10 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is June 01, 2021. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-416
Project Name	BERGEN 26 KV
State	New Jersey
County	Hudson
Transmission Owner	PSEG
MFO	10
MWE	10
MWC	10
Fuel	Storage
Basecase Study Year	2023

Any new service customers who can feasibly be commercially operable prior to June 1st of the basecase study year are required to request interim deliverability analysis.

4 Point of Interconnection

AF2-416 will interconnect with the PSEG distribution system via the existing Bergen 26 kV circuit D-342.

5 Cost Summary

The AF2-416 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$ 430,000
Total System Network Upgrade Costs	$ 0
Total Costs	$ 430,000

This cost excludes CIAC Tax Gross Up charges. Cost allocations for any System Upgrades will be provided in the System Impact Study Report.

6 Transmission Owner Scope of Work

AF2-416 is interconnecting to a non-Ferc jurisdictional circuit. As a result, the cost scope, cost and schedule of the physical interconnection will be outlined in the two party Interconnection Agreement between the Interconnection Customer and the Transmission Owner. A preliminary estimate is provided below.

The total physical interconnection costs is given in the table below:

Description	Total Cost
Attachment Facilities	$430,000
Direct Connection Network Upgrades	$0
Non-Direct Connection Network Upgrades	$0
Total Physical Interconnection Costs	$430,000

7 Schedule

The estimated schedule for completion of the Transmission Owner scope of work above is 6 months. This estimated duration does not include time required to procure and install Interconnection Customer equipment and associated PSEG activities dependent on the Interconnection Customer schedule.

8 Revenue Metering and SCADA Requirements

8.1 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 Section 8 of Attachment O.

9 Summer Peak - Load Flow Analysis

The Queue Project AF2-416 was evaluated as a 10 MW (Capacity 10.0 MW) injection at the **Bergen 26 kV** substation in the PSEG area. Project AF2-416 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-416 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

9.1 Generation Deliverability

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

None

9.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

None

9.3 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

9.4 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

10 Short Circuit Analysis

Short circuit analysis will be performed during the System Impact Study.