Generation Interconnection

Feasibility Study Report

for

Queue Project AF2-152

MORGANTOWN CT5 230 KV

2 MW Capacity / 2 MW Energy

July 2020

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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 PEPCO.

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) proposed an uprate to an existing Oil generating facility located in Charles County, Maryland. This project is an increase to the Interconnection Customer's **B02** project and will share the same point(s) of interconnection. The AF2-152 queue position is a 2 MW Energy (2 MW Capacity) uprate to the Morgantown combustion turbine unit, CT5. The total installed facilities will have a capability of 56 MW with 56 MW of this output being recognized by PJM as Capacity.

The project capability is summarized in the table below:

Description	Maximum Facility Output (MW)	Capacity Interconnection Rights (MW)
Existing (CT5)	54	54
Requested (CT5) Increase	2	2
Total (CT5)	56	56

The proposed in-service date for this uprate project is February 28, 2021. This study does not imply a TO commitment to this in-service date.

Queue Number	**AF2-152**
Project Name	MORGANTOWN CT5 230 KV
State	Maryland
County	Charles
Transmission Owner	PEPCO
MFO	56
MWE	2
MWC	2
Fuel	Oil
Basecase Study Year	2023

New Service Customers are required to request interim deliverability analysis for queue projects that can feasibly be commercially operable prior to June 1st of the basecase study year.

4 Point of Interconnection

AF2-152 will interconnect with the PEPCO transmission system at the Morgantown 230 kV substation.

5 Cost Summary

The AF2-152 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	$0
Total System Network Upgrade Costs	$0
Total Costs	$0

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 88-129. If at a future date it is determined that the

Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

Cost allocations for any System Upgrades will be provided in the System Impact Study Report.

6 Transmission Owner Scope of Work

The existing Transmission Owner Facilities are adequate to support this queue request.

7 Revenue Metering and SCADA Requirements

7.1 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.

7.2 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

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

8 Summer Peak - Load Flow Analysis

The Queue Project AF2-152 was evaluated as a 2.0 MW (Capacity 2.0 MW) injection as an uprate to Morgantown Generating Facility at the **Morgantown 230 kV substation** in the PEPCO area. Project AF2-152 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-152 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

8.1 Generation Deliverability

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

None

8.2 Multiple Facility Contingency

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

None

8.3 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

8.4 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

9 Short Circuit Analysis

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