



**Generation Interconnection  
Combined Feasibility / System Impact Study Report  
for  
Queue Project AG1-148  
MCCARTER 26.4 KV  
0 MW Capacity / 5 MW Energy**

January 2021

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## 1 Introduction

This Combined Feasibility / System Impact 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 Combined Feasibility / System Impact 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 Combined Feasibility / System Impact 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), Rutgers, The State University of New Jersey, has proposed a Natural Gas generating facility located in Essex County, New Jersey. The installed facilities will have a gross output of 17.1 MW with 12.1 MW serving a Behind the Meter Load. The total export to the transmission system is 5 MW with 0 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is November 09, 2021. This study does not imply a TO commitment to this in-service date.

|                            |                  |
|----------------------------|------------------|
| <b>Queue Number</b>        | <b>AG1-148</b>   |
| <b>Project Name</b>        | MCCARTER 26.4 KV |
| <b>State</b>               | New Jersey       |
| <b>County</b>              | Essex            |
| <b>Transmission Owner</b>  | PSEG             |
| <b>MFO</b>                 | 5                |
| <b>MWE</b>                 | 5                |
| <b>MWC</b>                 | 0                |
| <b>Fuel</b>                | Natural Gas      |
| <b>Basecase Study Year</b> | 2024             |

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

AG1-148 will interconnect with the PSEG distribution system at the McCarter 26.4 kV Substation.

The POI will be located at the line disconnect switches on the high side of the IC's circuit breaker.

### 5 Cost Summary

The AG1-148 project will be responsible for the following costs:

|   |                   |
|---|-------------------|
| <b>Description</b>                          | <b>Total Cost</b> |
| <b>Total Physical Interconnection Costs</b> | \$386,000         |
| <b>Total System Network Upgrade Costs</b>   | \$0               |
| <b>Total Costs</b>                          | \$386,000         |

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 2016-36, 2016-25 I.R.B. (6/20/2016). 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.

## 6 Transmission Owner Scope of Work

This project is connecting to a non-Ferc Jurisdictional circuit. As a result, a detailed scope will be provided 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<br>Installation of a fiber path from the Norfolk St station to the UMDNJ station. Installation of revenue grade metering. | \$386,000        |
| Direct Connection Network Upgrades  | \$0              |
| Non-Direct Connection Network Upgrades  | \$0              |
| <b>Total Physical Interconnection Costs</b>   | <b>\$386,000</b> |

## 7 Schedule

The estimated time to complete the scope of work is **11 months** after the relevant agreement(s) are signed and PSE&G receives Notice to Proceed. This duration does not include time for the IC to obtain necessary permits, easement, and approvals for Interconnection Facilities. The developer must obtain these approvals prior to PSE&G installation. PSE&G's schedule assumes reasonable efforts will be made by the Interconnection Customer to meet the proposed schedule, consequently delays to the Interconnection Customer's activities may lead to delays/changes to the PSEG's schedule as well.

## 8 Assumptions

The IC will be responsible for installing conduit from their station to the edge of the Norfolk Street station across the street from the UMDNJ campus including all necessary easements (municipal, state, etc.).

## 9 Revenue Metering and SCADA Requirements

### 9.1 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.

### 9.2 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:

## **10 Summer Peak - Load Flow Analysis**

The Queue Project AG1-148 was evaluated as a 5.0 MW (Capacity 0.0 MW) injection at the McCarter 26.4 kV Substation in the PSEG area. Project AG1-148 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AG1-148 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

### **10.1 Generation Deliverability**

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

None

### **10.2 Multiple Facility Contingency**

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

None

### **10.3 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

### **10.4 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

### **10.5 System Reinforcements - Summer Peak Load Flow - Primary POI**

None

## **11 Short Circuit Analysis**

The following Breakers are overdutied:

None

### **11.1 System Reinforcements - Short Circuit**

None

## **12 Affected Systems**

### **12.1 NYISO**

NYISO Impacts to be determined during later study phases (as applicable).

### 13 Attachment 1: One Line Diagram

