

***PJM Generator Interconnection Request  
Queue W2-036  
Polhemus Lane (Central Div. HQ) 13kV  
Feasibility/Impact Study Report***

**October 2010  
#616990**

# **W2-036 Polhemus Lane (Central Div. HQ) 13kV**

## **Feasibility/Impact Study**

### **General**

Public Service Electric and Gas Company has proposed installing a 0.863 MW solar project at the PSE&G Central Division Headquarters, 472 Weston Canal Road, Franklin Township, Somerset County, New Jersey. The commercial operation date is December 15, 2010.

The intent of the Feasibility/Impact study is to determine system reinforcements and associated costs and construction time estimates required to facilitate the addition of the new generating plant to the transmission system. The reinforcements include the direct connection of the generator to the system and any network upgrades necessary to maintain the reliability of the transmission system.

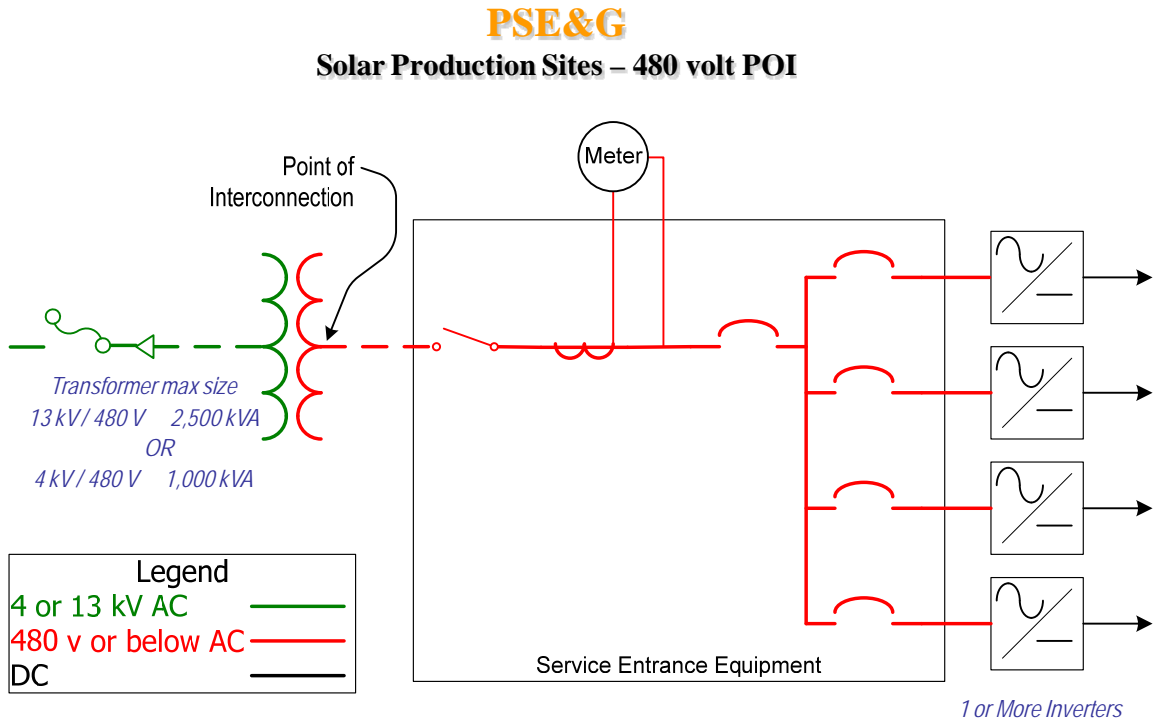
### **Direct Connection**

There will be a separate service for the solar panels. The solar project will be connected to a Polhemus Lane 13kV circuit. The point of interconnection and metering will be on the low side of the 13kV/480V transformer. The connection to the transmission system is at Polhemus Lane 13kV.

The cost in the Interconnection Agreement is exclusive of work required to be performed by the developer as specified in PSE&G's Information & Requirements for Electric Service Handbook. This work includes, but may not be limited to, the following:

- Developer is responsible for purchase and installation of all low voltage (277/480v) or high voltage (13-kV) service equipment as required for each site
- Developer will adhere to specifications detailed in the PSE&G Information and Requirements for electric service handbook
- Developer is responsible for all trenching and the installation of conduits and manholes as normally required and specified by PSE&G
- Developer must obtain all permits and easements required to install the interconnection facilities
- Developer must provide access for the installation, maintenance and operation of all service equipment

Figure #1



### **Network Impacts**

Queue project W2-036 was studied as a(n) 0.863 MW (0.328 MW of which was Capacity) injection into PSEG's system at the Polhemus Lane 13kV substation. The project was studied on a combined feasibility-impact basis which utilizes an AC analysis, and incorporates all contingency types. Project W2-036 was evaluated for compliance with reliability criteria for summer peak conditions in 2014. Potential network impacts were as follows:

### **Generator Deliverability**

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

No problems identified

### **Multiple Facility Contingency**

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

No problems identified.

### **Short Circuit**

*(Summary form of Cost allocation for breakers will be inserted here if any)*

No problems identified

### **Stability**

Not required because the project is less than 30 MW.

### **System Reinforcements**

None

### **Energy Portion of Interconnection Request**

*(PJM also studied the delivery of the energy portion of the surrounding generation. Any potential 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 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 analyzes all overload conditions associated with the overloaded element(s) identified. As a result of the aggregate energy resources in the area, the following violations were identified.)*

No problems identified.