PJM Generator Interconnection Request
Queue #W1-121
Crosswicks 13kV
Feasibility/Impact Study Report

July 2010
#604441

W1-121 Crosswicks 13kV Feasibility/Impact Study

General

Effisolar Energy Corporation has proposed installing an 8 MW AC solar project at the corner of Tattletown and Yardville-Allentown Road, Hamilton Township, Mercer County, New Jersey. The commercial operation date is July 1, 2011.

Direct Connection

The project will need to be split into two, with interconnection to two different distribution circuits.

There is a 3-phase distribution circuit, Crosswicks 13.2kV 8002, on Yardville-Allentown Road. One interconnection service point will be placed in the northwest corner of the property for connection to the 8002 circuit.

Another 3-phase circuit runs on Old York Road, Crosswicks 13.2kV 8001, south of the designated property. A 13kV extension will be constructed north on Tattletown Road to the second interconnection service point to be established in the southeast corner of the property.

PSE&G will provide primary service at 13.2kV. Solar-Bridge will provide the 13kV switchgear and 13kV/480:277v step-up transformers as required. The revenue metering will be located in a cubicle in the swithgear.

Each of the two interconnection points will have two 2MVA 277:480/13.2kV step-up transformers.

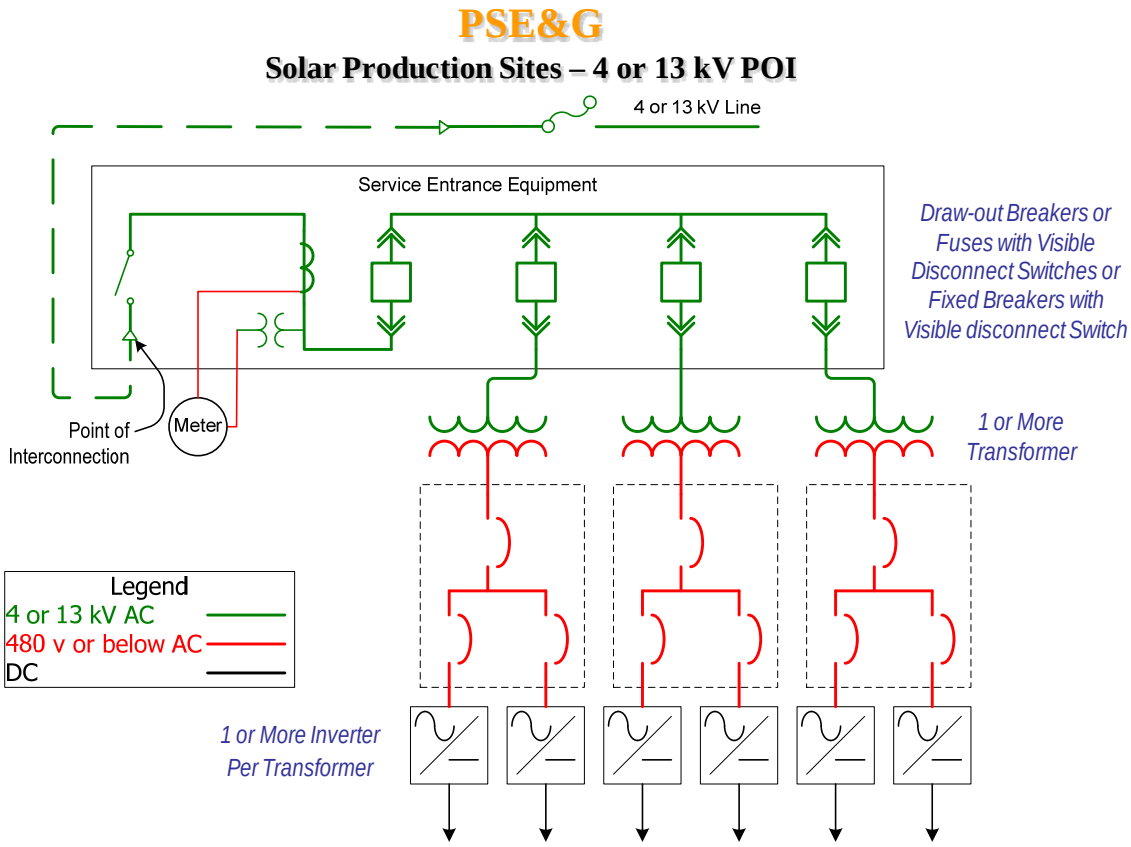
The cost estimate for the interconnection of the project will be provided by Public Service Electric and Gas Company.

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 W1-121 was studied as a(n) 8MW (3.04MW of which was Capacity) injection into PSEG's system at the Crosswicks 13kV substation. Project W1-121 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.