PJM Generator Interconnection Request
Queue #V4-005
Southampton 13.8kV
Feasibility/Impact Study Report

February 2010
#579089

V4-005 Southampton 13.8kV Feasibility/Impact Study

General

E-J Energy Services, a Division of E-J Electric Installation Company has proposed installing a 2.9 MW AC solar project, consisting of 15,510 Sanyo 215 watt modules, 4 Highridge Drive, Pemberton, Burlington County, New Jersey. The in-service date for the project is August 1, 2010.

Direct Connection

The project will be connected to a Southampton 13.8kV distribution feeder. PSE&G will provide the 13.8kV connection to the developer's 13.8kV/480 volt transformer. The point of interconnection will be at 13.8 kV. PSE&G will also provide the revenue metering and telemetering. E-J Energy Services, a Division of E-J Electric Installation Company will be responsible for meeting all provisions of the project Interconnection Agreement betweeen Public Service and PSE&G.

The cost for interconnection at 13-kV (primary service) to a feeder from the PSE&G Southampton Substation that is supplied from our Lumberton Switching Station is **$1,010,830.** This is based upon the most efficient possible route to the existing 13-kV Distribution infrastructure from the solar project interconnection station and is detailed as follows:

13-kV Line Extension - $ 984,155
Revenue Metering - $ 26,675
Feeder Metering - (existing)

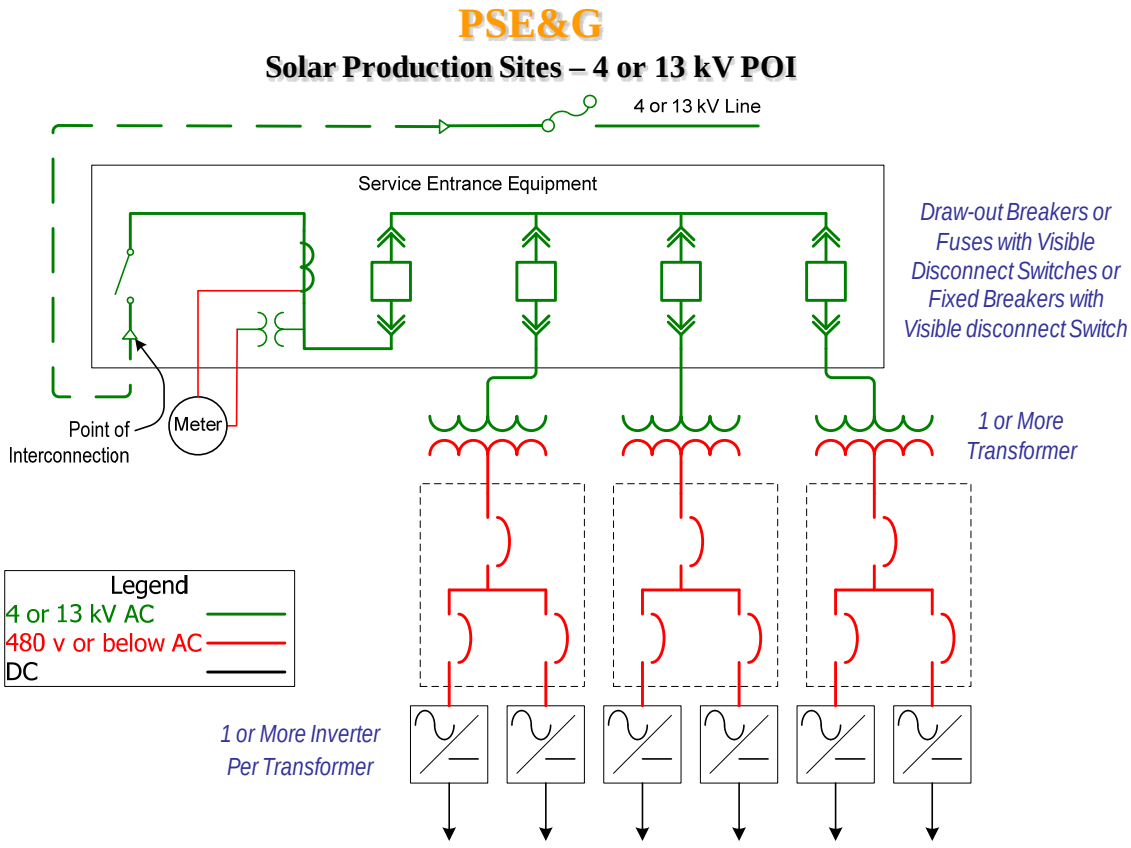
Total Cost - **$1,010,830**

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

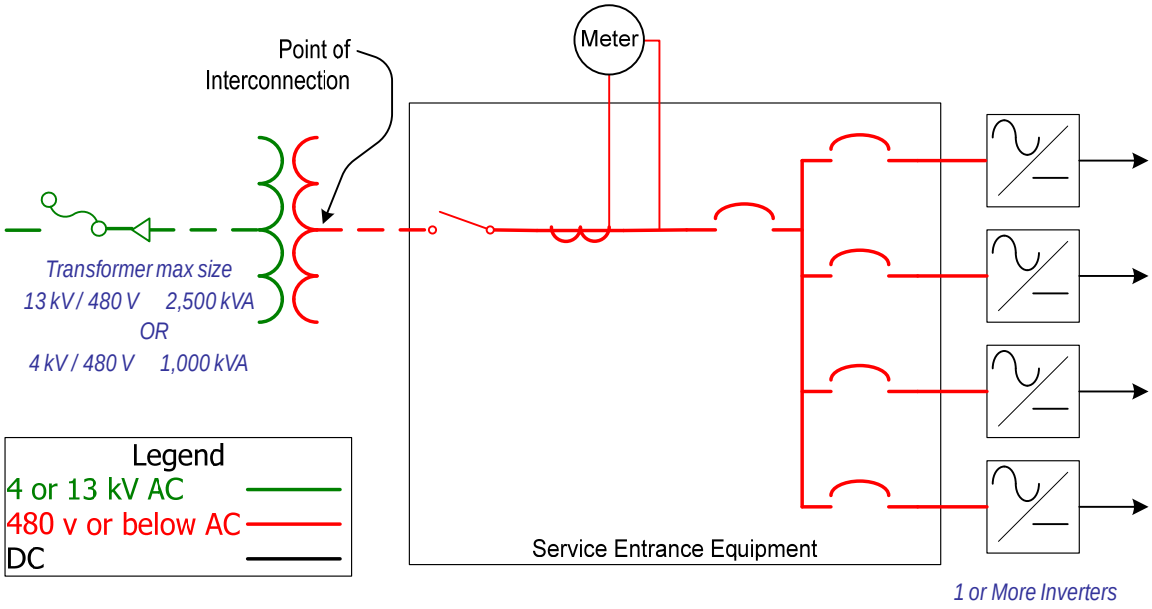
It is anticipated that material procurement and construction will require 6 months from the date of project approval and authorization.

Figure #1



PSE&G

Solar Production Sites – 480 volt POI



Network Impacts

The queue V4-005 project was studied as a 2.9MW injection (1.1 MW of which was capacity) into PSEG's system at the Lumberton 230kV substation. The project was studied on a combined feasibility-impact basis which utilizes an AC analysis, and incorporates all contingency types. Project V4-005 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.

Cost Allocation

The V4-005 project is responsible for 100% of the estimated $1,010,830 cost for the direct connection facilities described above.