

***PJM Generator Interconnection Request
Queue #V1-030
PSE&G Area Solar Project
Feasibility/Impact Study Report***

**July 2009
551699**

V1-030 PSE&G Area Solar Project Feasibility/Impact Study

General

Public Service Electric & Gas Company has proposed installing 52 MW of solar panels, 21.2 MW total at nine specific PSE&G owned facilities and 30.8 MW on individual poles throughout PSE&G service territory. The nine specific locations are listed in Table #1.

Table #1

1	Linden SNG	Off NJ Turnpike	Linden
2	Central Gas Plant	410 Silver Lake Avenue	Edison
3	Cox's Corner Switching Station	225 Sharp Road	Evesham
4	Brunswick Ave MGP	500-520 Brunswick Avenue	Trenton
5	Yardville Area Substation	Broad Street	Hamilton
6	Thorofare Switching Station	356 Jessup Road	West Deptford
7	Devil's Brook Substation	227 Culver Road	South Brunswick
8	Lawrence Substation	60 Bunker Hill Road	Lawrence
9	Paterson Gas Works	Leon Street & East Seventh Street	Paterson

Direct Connection

The nine specific projects will be connected directly to PSE&G distribution facilities. A description of the work required and cost estimates for that work are shown in Table #2.

Table #2

1	Linden SNG	Off NJ Turnpike	Linden	2.3	Install a 26-13-kv unit from a local subtransmission circuit (U-203) supplied from Linden Switching Station and install a new 13-kv feeder and provide primary service.	\$1,000	\$3,000	\$4,000
2	Central Gas Plant	410 Silver Lake Avenue	Edison	6.2	Install a 26-13-kv unit from a local subtransmission circuit (C-393) supplied from Metuchen Switching Station and install a new 13-kv feeder and provide primary service.	\$1,350	\$3,000	\$4,350
3	Cox's Corner Switching Station	225 Sharp Road	Evesham	1.5	Install a new 13-kv feeder from an existing feeder position at Cox's Corner and install 13-kv feeder and a step-down transformer to provide secondary service.	\$750	\$0	\$750
4	Brunswick Ave MGP	500-520 Brunswick Avenue	Trenton	1.5	Install 13-kv extension from an existing local 13-kv feeder (Lawrence 8008) and install a step-down transformer to provide secondary service.	\$700	\$0	\$700
5	Yardville Area Substation	Broad Street	Hamilton	3.9	Install new 13-kv feeder row at Yardville and install a new 13-kv feeder and provide primary service.	\$800	\$1,200	\$2,000
6	Thorofare Switching Station	356 Jessup Road	West Deptford	1.5	Install 13-kv extension from an existing 13-kv feeder at Thorofare and install a step-down transformer to provide secondary service.	\$600	\$0	\$600
7	Devil's Brook Substation	227 Outler Road	South Brunswick	1.2	Install 13-kv extension from an existing 13-kv feeder at Devils Brook and install a step-down transformer to provide secondary service.	\$600	\$0	\$600
8	Lawrence Substation	60 Bunker Hill Road	Lawrence	1.5	Install 13-kv extension from an existing 13-kv feeder at Lawrence and install a step-down transformer to provide secondary service.	\$600	\$0	\$600
9	Paterson Gas Works	Leon Street & East Seventh Street	Paterson	1.5	Provide supply from Fair Lawn Switching Station by extending two North Paterson 4-kv circuits and installing step-down transformers to provide secondary service.	\$1,000	\$0	\$1,000

Network Impacts

The queue V1-030 project was studied as a 52MW injection (19.8MW of which was capacity) into PSEG's system. The project consists of solar panels at 9 specific locations, as well as utility pole-top panels throughout PSEG's territory. For study purposes the pole-top panels were organized into 5 groups based on their electrical location, and modeled at 5 different points on the system. Project V1-030 was evaluated for compliance with reliability criteria for summer peak conditions in 2013. 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, Stuck breaker and Bus Fault contingencies for the full energy output)

No problems identified.

Short Circuit

Not required.

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)

No problems identified.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. “Network Impacts”, initially caused by the addition of this project generation)

None.

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)

None.