PJM Generator Interconnection Request
Queue W3-030
Medford (1626 Route 70) 13kV
Feasibility/Impact Study Report

January 2011
#628088

W3-030 Medford (1626 Route 70) 13kV Feasibility/Impact Study

General

Effisolar Energy Corporation has proposed installing an 8.0 MW solar project on property at 1626 Route 70, Southampton, Burlington County, New Jersey. The request was reduced to 5.0 MW after the kick-off teleconference to limit interconnection to one distribution circuit. The capacity evaluation is based upon 1.9 MW. The commercial operation date is February 6, 2012.

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

The interconnection will consist of a 13-kV Single Line service (8013) to the Medford Substation. Medford connects to the transmssion system at Lumberton 230kV station, The total interconnection cost of $561,715 is based on the most efficient possible route to the existing 13-kV infrastructure and is detailed as follows:

Project Item		13-kV Single Line
Inside Plant		
Line Position/Feeder Row		-
Relay Protection		-
Manholes/Conduit		-
Other/Misc.		-
	Sub Total	$0
Outside Plant		
Overhead Line		$404,315
Underground Line		-
Manholes/Conduit		-
Other/Misc.		-
	Sub Total	$404,315
Metering/Monitoring		
Revenue Metering/Telemetering/SCADA		$67,400
Feeder Metering		$90,000
Other/Misc.		-
	Sub Total	$157,400
Total Cost		**$561,715**

The cost 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 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 5-6 months from the date of project approval and authorization.

Below is the schedule of work PSE&G has proposed for the project:

August 1, 2011

ISA and CSA are fully executed and authorization is received to proceed with construction

Long lead time construction material is placed on order

September 15, 2011

Developer submits preliminary site plan, 13-kV switchgear one-line diagram and equipment specifications for approval

October 1, 2011

PSE&G provides comments on project lay-out and design

November 1, 2011

Developer submits final site plan, 13-kV switchgear one-line diagram and equipment specifications for approval

November 15, 2011

PSE&G provides final comments and approval of 13-kV switchgear lay-out and design

Developer begins construction based on approved design

December 1, 2011

PSE&G commences line construction

January 15, 2012

Switchgear inspection and approval by PSE&G

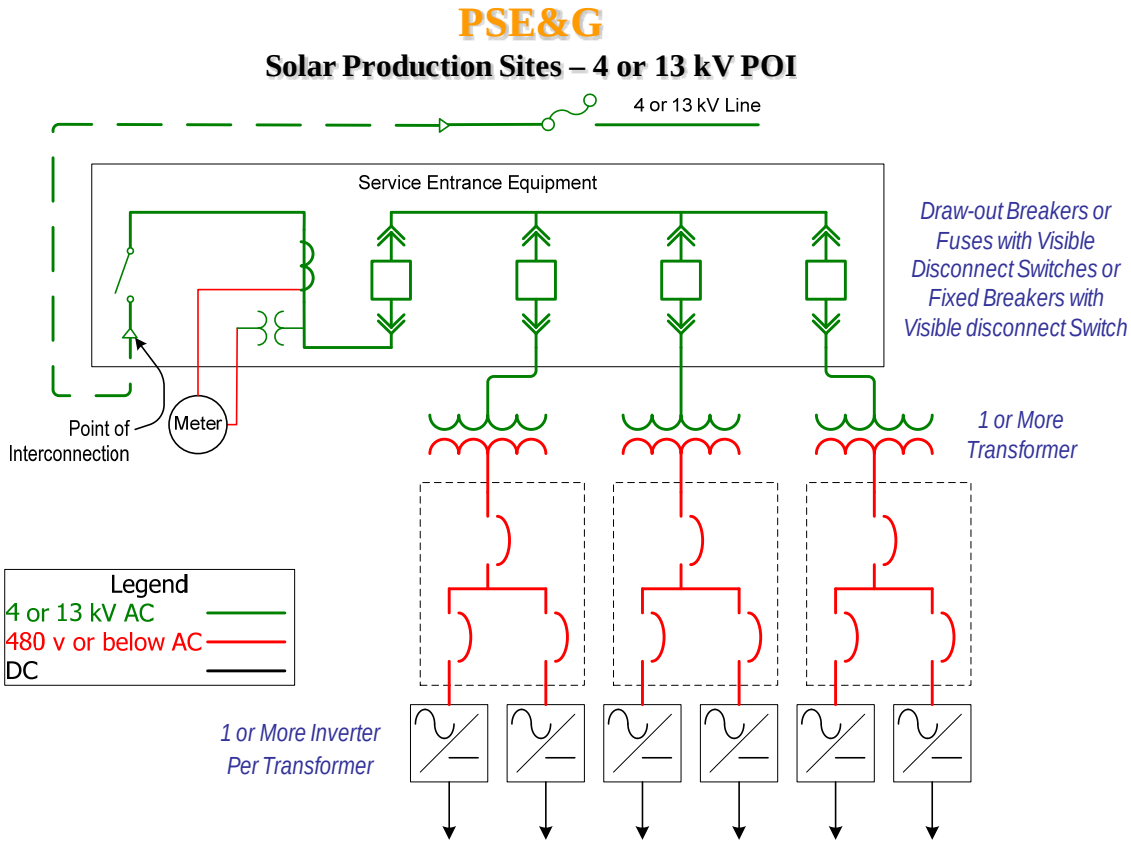
February 6, 2012

Completion of interconnection work and service cut-in

Notes:

1) Customer will abide by PSE&G Information and Requirements for electric service hand book
2) Customer is responsible to provide trench, conduit and manholes were applicable
3) Customer is responsible to provide access and easements
4) Customer is responsible to provide permits and associated costs.
5) Electric service route was based on most efficient route
6) Material procurement will be six months from project approval/authorization

Figure #1



Network Impacts

Queue project W3-030 was studied as a(n) 5.0 MW (1.9 MW of which was Capacity) injection 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 W3-030 was evaluated for compliance with reliability criteria for summer peak conditions in 2015. 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.