PJM Generator Interconnection Request
Queue X3-007
Bustleton (LB Solar) 13kV
Feasibility/Impact Report

December 2011
#675758

Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

X3-007 Bustleton (LB Solar) 13kV Feasibility/Impact Study

General

LB Solar has proposed a 2.0 MW AC solar project to be installed at 2078 Old York Road, Burlington, Burlington County, New Jersey. The project is across the street from Bustleton Station. The project will use 8 250kW inverters and approximately 6700 Lumos LS300 solar panels.

The proposed back feed date for the project is May 1, 2012.

The proposed in-service date for the project is June 1, 2012.

Direct Connection

The following are estimates (including risk and contingencies) for the interconnection of the 2.0 MW LB Solar Project in Burlington, New Jersey. The interconnection will consist of a 13-kV primary interconnection to the Bustleton 8014 circuit. The Bustleton 8014 circuit connects to the T1 transformer at Bustleton. The total interconnection cost will be as shown below:

			13-kV	
Project Item			Single Line	
			BUS8014	
Inside Plant				
	Line Position/Feeder Row		-	
	Relay Protection		-	
	Manholes/Conduit		-	
	Other/Misc.		-	
	Sub Total		$0	
Outside Plant				
	Overhead Line		$236,582	
	Underground Line		-	
	Manholes/Conduit		-	
	Other/Misc.		-	
	Sub Total		$236,582	
Metering/Monitoring				
	Revenue Metering/Telemetering/SCADA		$75,900	
	Feeder Metering		$30,000	(Note 1)
	Other/Misc.		-	
	Sub Total		$105,900	
	Total Cost		**$342,482**	
Acceptable Generation Level			**Up to 2.0 MW**	
Note 1: If previous solar projects are not completed the price could increase by $60,000.				

This 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 is responsible for purchase and installation of all high voltage (277/480V, 13-kV, 26-kV, and 69-kV) service equipment as required
- 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.

Project Schedule

February 28, 2012
WMPA and IA (with PSE&G) are fully executed and authorization is received to proceed with construction
Long lead time construction material is placed on order

March 15, 2012
Developer submits preliminary site plan, 13-kV switchgear one-line diagram and equipment specifications for approval

March 31, 2012
PSE&G provides comments on project lay-out and design

April 10, 2012
Developer submits final site plan, 13-kV switchgear one-line diagram and equipment specifications for approval

April 20, 2012
PSE&G commences line construction

May 10, 2012
PSE&G provides final comments and approval of 13-kV switchgear lay-out and design. Developer begins construction based on approved design

May 20, 2012
Switchgear inspection and approval by PSE&G

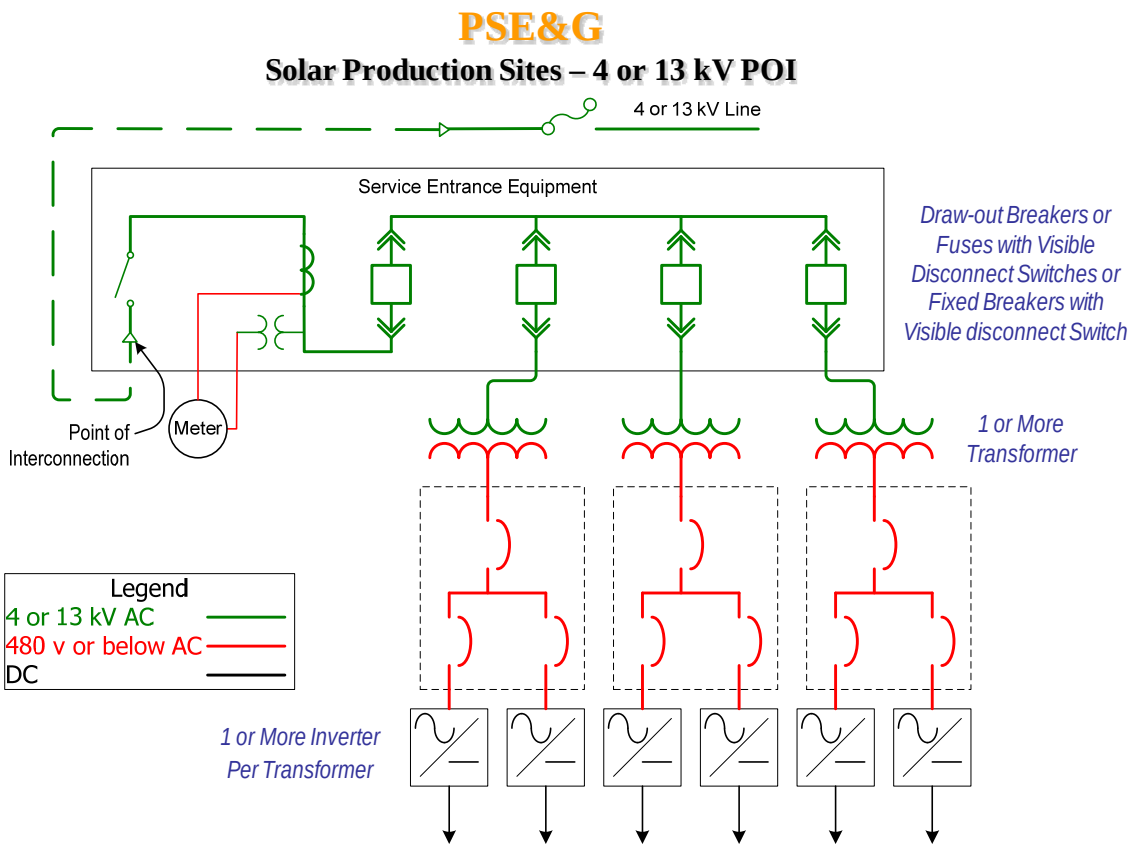
June 1, 2012

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

The Queue Project #X3-007 was studied as a(n) 2.0 MW(Capacity 0.0MW) injection at Bustleton 13kV station in the PSEG area. Project #X3-007 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.