# *Generation Interconnection*
# *Feasibility Study Report*
# *Queue Position W1-070*

The Interconnection Customer (IC) has proposed a 20 MWE (7.6 MWC) solar powered generating facility consisting of ground mounted fixed panel solar arrays to be located in Wicomico County, Maryland. PJM studied W1-070 as a 20 MW injection into the Delmarva Power and Light's (DPL) system at a tap of the Laurel-Sharptown 69kV circuit. The project was evaluated for compliance with reliability criteria for summer peak conditions in 2014.

## Point of Interconnection

W1-070 will connect to the Delmarva Power and Light system at the Laurel 69kV substation.

## Direct Connection Requirements

### Transmission Owner Scope of Direct Connection Work

The scope of work and estimated costs for the direct connection facilities is as follows:

Laurel 69kV substation

Create one (1) 69kV bus position and place a disconnect switch before the POI for the Interconnection Customer's 69kV line to the W1-070 site. The scope of the work may require underground cabling. The estimated cost includes a new breaker and cable.
The estimated cost to perform this work is **$1,200,000** and will take an estimated **24 – 36 months** to complete after receipt of a fully executed Interconnection Service Agreement (ISA) and Interconnection Construction Service Agreement (CSA).

Note: the above cost does not include the Contribution in Aid of Construction (CIAC) tax.

### Interconnection Customer Scope of Direct Connection Work

The Interconnection Customer (IC) assumes full responsibility for design and construction of all facilities associated with the W1-070 project on their side of the Point of Interconnection. Site preparation, including grading and an access road as necessary, is assumed to be by the IC.

The Interconnection Customer will interconnect W1-070 with the DPL system by constructing a customer owned 69kV circuit from their generating site to the Laurel 69kV substation. The above cost estimates do not include construction of that line or bus work. Route selection, line design, right-of-way acquisition and construction of such lines will be entirely the responsibility of the Interconnection Customer. It is assumed that the Interconnection Customer's substation will be adjacent to the Laurel 69kV substation.

The IC will be required to install metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM. The requirements for this equipment are listed in Appendix 2, Section 8 of Attachment O to the PJM Tariff, as well as PJM Manuals 01 and 14D. Protective relaying and metering design and installation must comply with Delmarva Power and Light's Applicable Standards.

## Transmission Network Impacts

Potential transmission network impacts are as follows:

### Generator Deliverability

*(Single or N-1 contingencies for the **Capacity** portion only of the interconnection)*

None

### Multiple Facility Contingency

*(Double Circuit Tower Line contingencies only with **Full** energy output. Stuck Breaker and Bus Fault contingencies will be applied during the Impact Study)*

None

### 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)*

None

### Short Circuit

No problems identified.

### Stability Analysis

Not required due to project size.

### New System Reinforcements

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

None

**Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project.*

None

**Potential Congestion due to Local Energy Deliverability**

*(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 below. There is no guarantee of full deliverability 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 identified overloaded element(s). As a result of the aggregate energy resources in the area, the following violations were identified:*

These are not required reliability upgrades.

None