Generation Interconnection Feasibility Study Report

Queue Position AD1-020

Hunterstown - Lincoln 115 kV

(Revised)

General

Interconnection Customer has proposed a new solar and battery storage generation facility located approximately one mile from Hunterstown substation in Straban Township, Adams County, Pennsylvania. The installed facilities will have capability of 100 MW with 53.6 MW of this output being recognized by PJM as capacity.

The following table shows the MW systems contributions of each fuel type as related to the Maximum Facility Output:

	Queue No.	**Solar**	**Battery**	**Total MW**
	AD1-020	80	20	100
Total MFO MW				100

The following table shows the Capacity Interconnection Rights (CIR) contributions for each fuel type as recognized by PJM:

	Queue No.	**Solar**	**Battery**	**Total CIR**
	AD1-020	53.6	0.0	53.6
Total CIR MW				53.6

The proposed in-service date is September 30, 2020. This study does not imply a **Mid-Atlantic Interstate Transmission ("MAIT") company commitment to this in-service date.**

Point of Interconnection (POI)

This project will interconnect with the MAIT transmission system by building a new substation to tap the 115 kV transmission line as described in the following two options:

Option #1 POI or Primary Point of Interconnection:

Tapping the Hunterstown – Lincoln 115 kV line, Circuit #962, total length of this circuit is 1.9 miles, the new ring bus station will be located approximately one mile from Hunterstown substation.
The Primary POI connection costs are detailed in the Cost Summary section of this report.

Option #2 POI or Secondary Point of Interconnection:

Tapping the Hunterstown – Ortana 115 kV line, Circuit #963, total length of this circuit is 2.26 miles, the new ring bus station will be located approximately 1.78 miles from Hunterstown substation.
The Secondary POI costs are not provided in this report.

The Point of Interconnection will be located at the new substation's exist side to solar plant.
Please refer to Appendix 2 for one-line diagram of system configuration.

Network Impacts

Option 1 POI or Primary Point of Interconnection:

The Queue Project AD1-020 was evaluated as a 100.0 MW (Capacity 53.6 MW) injection tapping the Hunterstown to Lincoln 115kV line in the METED area. Project AD1-020 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-020 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Analysis - 2021

Generator Deliverability

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

None

Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

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

Steady-State Voltage Requirements

To be determined at later study stages

Short Circuit

None

Affected System Analysis & Mitigation

Delivery of Energy Portion of Interconnection Request

PJM also studied the delivery of the energy portion of this interconnection request. Any 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 Merchant Transmission Interconnection request.
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 will study all overload conditions associated with the overloaded element(s) identified.

None

Light Load Analysis - 2021

Light Load Studies to be conducted during later study phases (as required by PJM Manual 14B).

System Reinforcements

Short Circuit

None

Stability and Reactive Power Requirement

To be determined at later study stages

Summer Peak Load Flow Analysis Reinforcements

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

Light Load Load Flow Analysis Reinforcements

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

Option 2 POI or Secondary Point of Interconnection:

The Queue Project AD1-020 was evaluated as a 100.0 MW (Capacity 53.6 MW) injection tapping Hunterstown to Lincoln Tap 115kV line in the METED area. Project AD1-020 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AD1-020 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Analysis - 2021

Generator Deliverability

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

None

Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

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

Steady-State Voltage Requirements

(Results of the steady-state voltage studies should be inserted here)

To be determined during later study phases

Short Circuit

None

Affected System Analysis & Mitigation

Delivery of Energy Portion of Interconnection Request

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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 will study all overload conditions associated with the overloaded element(s) identified.

None

Light Load Analysis - 2021

Light Load Studies to be conducted during later study phases (as required by PJM Manual 14B).

System Reinforcements

Short Circuit

None

Stability and Reactive Power Requirement

To be determined during later study phases

Summer Peak Load Flow Analysis Reinforcements

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

Light Load Load Flow Analysis Reinforcements

New System Reinforcements

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

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None