Facilities Study Report

For

Physical Interconnection of

PJM Generation Interconnection Request

Project ID AG2-616 & AH1-641

“Churchtown - AE1-229 Substation 138 kV”

Revision 3: May 2026

Introduction

This Facilities Study has been prepared in accordance with the PJM Open Access Transmission Tariff, as well as the Application and Studies Agreement between the Project Developer and PJM Interconnection, LLC (PJM or Transmission Provider (TP)). The Transmission Owner (TO) is Atlantic City Electric.

This Facility Study was performed to satisfy the Phase 2 Facility Study requirement of the PJM Tariff. The Facility Study is intended to provide scope, cost and schedule estimates for the project as currently defined and approved for Phase 2 study. In the event project changes are made during DP2 that impact this report, updates will be provided as part of the Phase 3 report. Following execution of the project's final agreement, this report will not be updated to account for other changes made as part of the agreements modification clause and instead the scope change process will be followed.

A. Transmission Owner Facilities Study Summary

1. PROJECT DESCRIPTION

The Project Developer (PD) has proposed a Solar Generating Facility located in Salem County, New Jersey with a designated PJM Project ID of AG2-616. The installed facilities will have a total Maximum Facility Output (MFO) of 50 MW with 32.35 MW of this output being recognized by PJM as Capacity.

The Project Developer (PD) has proposed a uprate to this planned/existing Solar Generating Facility located in Salem County, New Jersey with a designated PJM Project ID of AH1-641.

This project is an increase to the planned AG2-616 project above and will share the same Point of Change in Ownership.

The AH1-641 project is a 15 MW uprate (7 MW Capacity uprate) to the previous project. The total installed facilities will have a capability of 65 MW with 39.35 MW of this output being recognized by PJM as Capacity.

2. POINT OF INTERCONNECTION (POI)

The Generating Facility will interconnect with the Atlantic City Electric transmission system via a newly constructed 138kV 4-breaker ring bus substation. This substation will tap into the 138kV transmission line running between Churchtown Substation and the new substation that was built at part of PJM Queue Project AE1-229 (hereby known as “AE1-229 Substation”).

This construction will result in the splitting of the existing Churchtown – AE1-229 Substation 138kV line into two lines on the transmission system. The two new lines resulting from splitting this existing circuit shall be assigned new names and circuit numbers.

The proposed generation interconnection is shown on the single line diagram in Attachment #1.

3. POINT OF CHANGE IN OWNERSHIP

The Point of Change in Ownership will be located at the first transmission dead end structure outside of the substation fence that leads to this developer's generating facility. This dead-end structure will be owned and installed by the Project Developer.

4. SCOPE OF PROJECT DEVELOPER INTERCONNECTION FACILITIES

Project Developer will design, build, own, operate and maintain the Project Developer Interconnection Facilities on Project Developer's side of the Point of Change in Ownership (PCO). This includes, but is not limited to:

- Circuit breakers and associated equipment located between the high side of the MPT(s) or GSU(s) and the Point of Change in Ownership
- Generator lead line from the Generating Facility to the Point of Change in Ownership
- Relay and protective equipment, telecommunications equipment, and Supervisory Control and Data Acquisition (SCADA) to comply with the TO's Applicable Technical Requirements and Standards

B. Transmission Owner Facilities Study Results

The following is a description of the planned Transmission Owner facilities for the physical interconnection of the proposed AG2-616 & AH1-641 project to Atlantic City Electric transmission system. These facilities shall be designed according to Atlantic City Electric Applicable Technical Requirements and Standards. Once built, Atlantic City Electric will own, operate, and maintain these Facilities.

1. TRANSMISSION OWNER INTERCONNECTION FACILITIES:

A 138 kV take-off structure and foundation will be installed within the fence of the Interconnection Substation, to terminate the Project Developer's generator lead line.

There will be a 138 kV line conductor span from the take-off structure to the bus position in the switchyard of the interconnection substation.

The 138kV line conductor up to the first transmission line dead end structure outside the substation fence will be owned by the TO. The first transmission line dead end structure outside the substation fence will be owned by the Project Developer, and shall serve as the Point of Change in Ownership.

2. STAND ALONE NETWORK UPGRADES

AG2-616 & AH1-641 New Substation

A new 4-breaker ring bus substation, designed as part of this project at the 138kV level, will be constructed along the 138kV transmission line between Churchtown – AE1-229 Substation to interconnect the project with the Atlantic City Electric transmission system.

A new greenfield 138kV 4-breaker ring bus substation will be built with ability to expand to a 6-position breaker-and-a-half bus. The project shall cut into the existing 138kV Churchtown – AE1-229 line. Only three (3) line terminals will be installed in the new substation. Two (2) of the terminals will be tie-ins of the newly divided 138kV Churchtown – AE1-229 line. The third terminal will connect to the customer's interconnection facilities. In addition, new circuit breakers and line protections relays, along with associated incoming fiber cable connection for the three (3) lines will be installed.

For the Transmission Owner build option, the transmission owner will design, construct, inspect and install all equipment as described above. Regarding the property ACE must acquire for the installation of the new substation, this facility study assumes an average cost of $200k per acre. The estimated time for the procurement of this land (including permitting) is 18 months and has been reflected in the schedule.

For the Option-To-Build where the Project Developer will build the substation, the transmission owner will only be responsible for engineering and construction oversight as well as final commissioning of the substation prior to energization. A separate cost estimate has been provided.

3. NETWORK UPGRADES

The Churchtown - AE1-229 138kV line will be cut and looped into the new interconnection substation.

4. OTHER SCOPE OF WORK

N/A

5. MILESTONE SCHEDULE FOR COMPLETION OF ACE WORK

Facilities outlined in this report are estimated to take 36 to 48 months to construct, from the time the Generation Interconnection Agreement is fully executed. This schedule is may be impacted by the timeline for procurement and installation of long lead items, the ability to obtain outages to construct and test the proposed facilities.

Description	Start month	Finish month
Property Acquisition (Optional)	1	18
Detailed Design	1	30
Permitting	30	36
Construction	36	48

6. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

- Substation design shall consist of (2) 138kV bays configured in 4-breaker ring bus arrangement. Space for a third bay have been allocated in the substation design, which shall be used to transform the substation into 6-position breaker-and-a-half bus in the future.

- Substation exact location is to be determined in future stages of the project.
- It is assumed that strain conductors and insulator assemblies associated with new outgoing transmission line are covered under the transmission line scope.
- The connection between the take-off tower in the new ring bus substation and the transmission structures outside the substation will be overhead and will not require any other transmission structures between the two take-off towers. It will be high enough to allow vehicles to drive under it.
- The 145 kV circuit breaker (CB) is identified as a critical path item. At the time of submission of this report, the estimated procurement lead time is 145 weeks. This lead time is subject to change based on market conditions, manufacturer availability, and other external factors.
- Regarding the property ACE must acquire for the installation of the new substation, this facility study assumes an average cost of $200k per acre. The estimated time for the procurement of this land (including permitting) is 18 months and has been reflected in the schedule.

7. REVENUE METERING REQUIREMENTS

All revenue metering needed for this interconnection project must meet the metering requirements stated in Appendix 2, section 8 of the AG2-616 & AH1-641 GIA, and in PJM Manuals M01 and M14D. The details of applicable revenue metering requirements are given in the 'ACE Engineering & Construction Standards' posted on PJM website.

The revenue metering will be installed on the Project Developer side of the Point of Change in Ownership. The revenue meter will be provided and installed by the Project Developer but owned and maintained by ACE.

Project Developer will be required to install telemetry equipment at the Point of Interconnection identified in Schedule C of the AG2-616 & AH1-641 GIA to provide real-time telemetry data to PJM in accordance with the requirements listed in PJM Manuals 01, 14A, 14B, and 14D. Protective relaying and metering design and installation must comply with the Applicable Technical Requirements and Standards identified in Schedule D of the AG2-616 & AH1-641 GIA.

8. LAND REQUIREMENTS FOR INTERCONNECTION SUBSTATION

Land acquisition for the new interconnection substation is at the developer's cost. In the event of the Project Developer selecting "Option to Build', substation ownership and associated land rights must be transferred to ACE prior to inspection and initial energization of the substation. For a new greenfield substation that ACE will construct, the land rights must be transferred fee-simple to ACE prior to the start of below grade construction.

ACE's minimum acreage for a 138kV substation is 5 acres.

9. APPLICABLE TECHNICAL REQUIREMENTS AND STANDARDS

Applicable Technical Requirements and Standard:

PHI Substation Design Manual

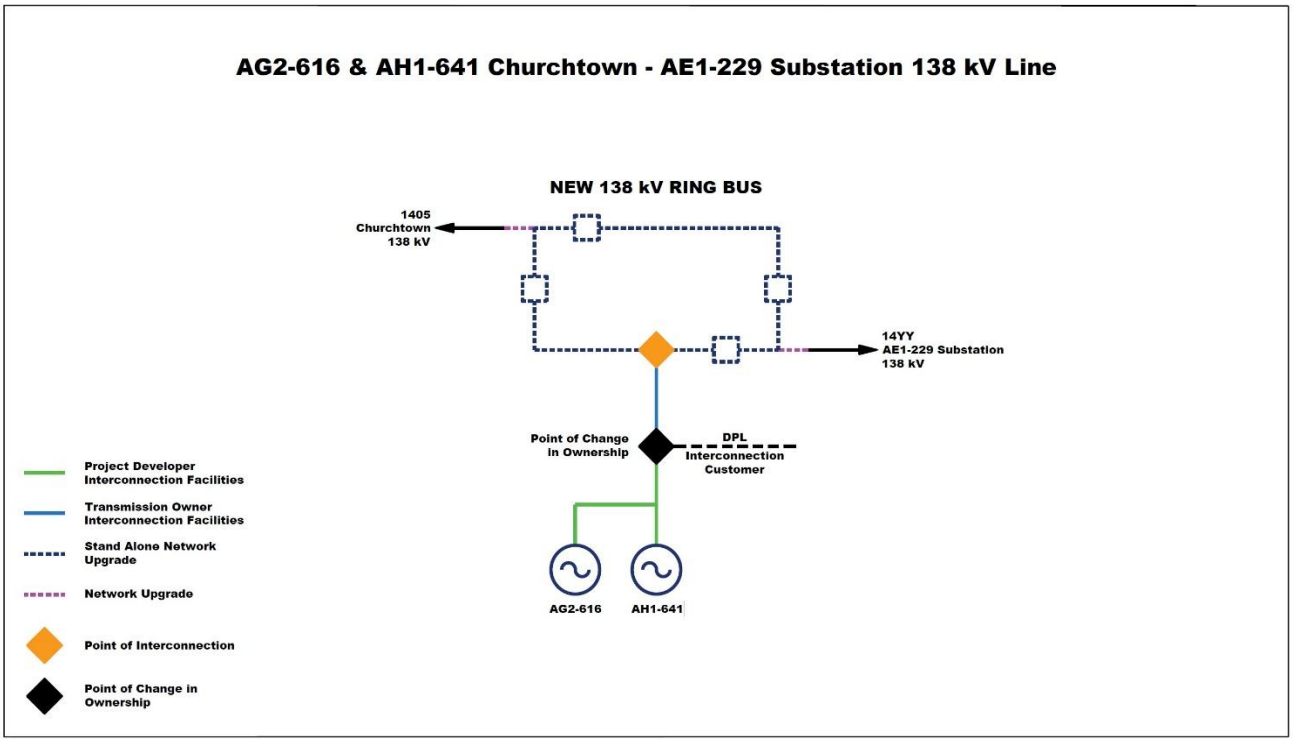
OH Transmission Design Manual

10. ENVIRONMENTAL AND PERMITING

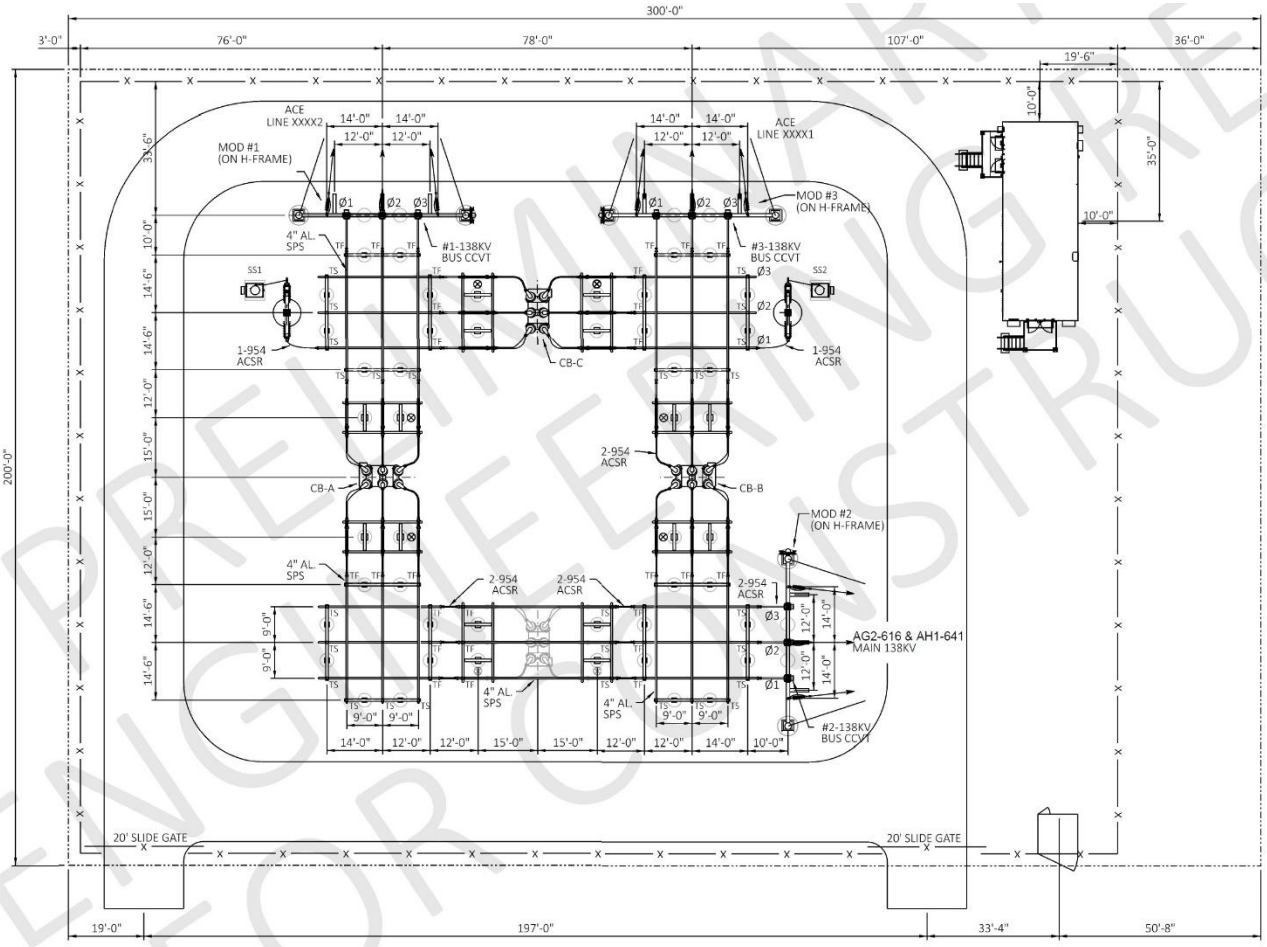
Permits include but not limited to: Site Plan, Soil Conservation District, local building permit,

C. APPENDICES

Attachment #1: Single Line Diagram for the Physical Interconnection



Attachment #2: Substation General Arrangement



PRELIMINARY ENGINEERING FOR CONSTRUCTION