

Facilities Study Report
For
Physical Interconnection of
PJM Generation Interconnection Request
Project ID AH1-706

“Lordstown 345 kV”

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 American Transmission Systems, Inc. (ATSI), a FirstEnergy company.

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 has proposed an uprate to an existing Natural Gas Generating Facility located in Trumbull County, Ohio. The AH1-706 project is a 30.453 MW (23.823 MW Capacity) uprate to the previous project (AB1-017/AF2-044), for a total Maximum Facility Output (MFO) of 970.453 MW with 107.82 MW of this output recognized by PJM as Capacity.

2. POINT OF INTERCONNECTION (POI)

The Generating Facility will interconnect with the ATSI transmission system at the existing Lordstown Substation as an uprate to AB1-017/AF2-044.

3. POINT OF CHANGE IN OWNERSHIP (PCO)

The PCO will remain the same as AB1-017/AF2-044, located at the last Project Developer-owned structure outside the existing Lordstown substation fence line

4. SCOPE OF PROJECT DEVELOPER FACILITIES

Project Developer will design, build, own, operate and maintain the Project Developer Interconnection Facilities on Project Developer's side of the PCO. These facilities may have been constructed as part of AB1-017/AF2-044. This includes, but is not limited to:

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

B. Transmission Owner Facilities Study Results

The following is a description of Transmission Owner facilities for physical interconnection of the proposed AH1-706 project to ATSI transmission system. These facilities shall be designed according to FirstEnergy Applicable Technical Requirements and Standards. Once built, ATSI will own, operate, and maintain these Facilities.

1. TRANSMISSION OWNER INTERCONNECTION FACILITIES (TOIF)

1.1 Lordstown Energy Center Substation

Energize and integrate generator interconnection facilities to the transmission system.

- Relay and Controls Scope of Work
 - Integrate interconnection facilities protection and controls to the transmission system.
- Ancillary Scope of Work
 - Project Management
 - Project management will be required for this asset.
 - Revenue Metering
 - Provide support for updates to existing revenue metering.
 - Testing and Commissioning
 - Test and commission all power assets.

2. STAND ALONE NETWORK UPGRADES

None

3. NETWORK UPGRADES

3.1 Lordstown Substation

Review and revise relay settings

- Below Grade Scope of Work:
 - None
- Above Grade Scope of Work:
 - None

- Relay & Control Scope of Work
 - Review and revise relay settings
- Scope of Work Assumptions:
 - TBD
- Ancillary Scope of Work
 - Project Management
 - Provide project management, coordination, administration, scheduling, material management and project development if required.
 - Information Technology
 - None
 - Testing and Commissioning
 - To test and commission all power assets.

3.2 Wellsville Substation

Review and revise relay settings

- Below Grade Scope of Work:
 - None
- Above Grade Scope of Work:
 - None
- Relay & Control Scope of Work
 - Review and revise relay settings
- Scope of Work Assumptions:
 - TBD
- Ancillary Scope of Work
 - Project Management
 - Provide project management, coordination, administration, scheduling, material management and project development if required.
 - Information Technology
 - None
 - Testing and Commissioning
 - To test and commission all power assets.

3.3 Highland Substation

Review and revise relay settings

- Below Grade Scope of Work:
 - None
- Above Grade Scope of Work:
 - None
- Relay & Control Scope of Work
 - Review and revise relay settings
- Scope of Work Assumptions:
 - TBD
- Ancillary Scope of Work
 - Project Management
 - Provide project management, coordination, administration, scheduling, material management and project development if required.
 - Information Technology
 - None
 - Testing and Commissioning
 - To test and commission all power assets.

3.4 Bruce Mansfield Substation

Review and revise relay settings

- Below Grade Scope of Work:
 - None
- Above Grade Scope of Work:
 - None
- Relay & Control Scope of Work
 - Review and revise relay settings
- Scope of Work Assumptions:
 - TBD
- Ancillary Scope of Work
 - Project Management
 - Provide project management, coordination, administration, scheduling, material management and project development if required.

- Information Technology
 - None
- Testing and Commissioning
 - To test and commission all power assets.

4. Other Scope of Work

4.1 Provide support for updates to the existing Project Developer-Owned revenue metering

5. MILESTONE SCHEDULE FOR COMPLETION OF ATSI WORK

Facilities outlined in this report are estimated to take 10 months to construct, from the time the Generation Interconnection Agreement is fully executed. This schedule 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
Preliminary Engineering	1	2
Detailed Engineering	5	9
Siting, Permitting & Real Estate	-	-
Equipment Delivery	-	-
Construction	9	10
Testing and Commissioning	10	10

6. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

6.1 Scope Assumptions:

- Project Developer is responsible for making all arrangements for electric distribution service (if required) for its generation station. No costs or schedule are included herein.

6.2 Cost Estimate Assumptions:

- The cost estimates provided for this project were developed as of February 25, 2026, based upon current market conditions. Hence, they are subject to significant changes in the event that project implementation is delayed. Notwithstanding the cost estimates from this report being used in the Generator Interconnection Agreement for the related project, ATSI reserves the right to re-evaluate and

provide a more accurate cost estimate during the implementation phase of the project. In accordance with section 217 of the Open Access Transmission Tariff, the Project Developer will be responsible for 100 percent of the actual costs of the facilities required to accommodate its Interconnection Request.

- ATSI reserves the right to charge the Project Developer operation and maintenance expenses to maintain the Project Developer attachment facilities, including metering facilities, owned by ATSI. These costs will be specified in the Generator Interconnection Agreement.

6.3 Schedule Assumptions:

- This schedule assumes that all issues covered by the “Environmental, Real Estate and Permitting Issues” section of this document are resolved. Construction cannot begin until after all applicable permits and/or easements have been obtained.
- ATSI’s ability to support this schedule also depends on the feasibility of taking the required outages to support construction. Outages that are determined to negatively impact system reliability or cause congestion may be delayed or denied, at any time, even if they are submitted on time based on the Outage Submittal Rules in section 4.2.1 of PJM Manual 03. This includes, but is not limited to, outages requested between the months of June and September, as well as January and March, which typically get denied due to summer and winter peak conditions. Therefore, the construction schedule will be adjusted as needed to accommodate any outage restrictions that have been identified by ATSI or the Transmission Provider.

7. REVENUE METERING REQUIREMENTS

Revenue metering equipment is owned, operated, and maintained by the Project Developer.

Transmission Owner’s Revenue Metering Requirements may be found in the FirstEnergy Corporation Requirements for Transmission Connected Facilities document which can be found on the PJM website at:

<https://pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy>

These requirements are in addition to any metering required by PJM.

Transmission Owner will obtain real-time, site-specific, generation data from PJM, via the required communication link from Project Developer to PJM. Transmission Owner will work with PJM and Project Developer to ensure the generation data provided to PJM meets Transmission Owner's requirements.

8. LAND REQUIREMENTS FOR INTERCONNECTION SUBSTATION

Not Applicable

9. APPLICABLE TECHNICAL REQUIREMENTS AND STANDARDS

The [Requirements for Transmission Connected Facilities](#), Revision 7, dated January 27, 2026, shall apply.

10. ENVIRONMENTAL AND PERMITTING

Not Applicable

C. APPENDICES

ATTACHMENT #2: PROTECTION SCOPE

Short Circuit Analysis

Short Circuit Values

The existing 345kV fault values at the AH1-706 interconnection location (Lordstown 345kV) are:

Three phase = 34.2kA

Single line to ground = 34.8kA

$Z1 = (0.03 + j 0.49)\%$

$Z0 = (0.06 + j 0.46)\%$

These values are provided for bolted, symmetrical faults under anticipated normal system conditions and are provided on a 345kV, 100MVA base. Future increases in fault currents are possible and it is the Project Developer's responsibility to upgrade their equipment and/or protective equipment coordination when necessary.

Protection Requirements

AH1-706 is a proposed uprate to the existing generation at Lordstown Energy Center. It is understood that no changes are being made to the utility-side of the Project Developer's interconnecting transformers.

The Project Developer will be required to comply with all FE Generation Protection Requirements for Generation Project Developers. The Generation Protection Requirements may be found within the "FirstEnergy Requirements for Transmission Connected Facilities" document located at the following links:

www.firstenergycorp.com/feconnect

www.pjm.com/planning/design-engineering/to-tech-standards.aspx

FE System Modifications

System modifications may be required to make settings changes and/or replace existing relays at FirstEnergy remote substation. Generator relaying will be required to coordinate with upstream transmission system protection.

Settings Changes

Settings changes are possible at, but not limited to, the following stations:

- Highland
- Lordstown
- Bruce Mansfield
- Wellsville