



**Generation Interconnection  
Feasibility Study Report  
for  
Queue Project AE1-201  
Marengo 34 KV  
16.4 MW Capacity / 20 MW Energy**

June, 2019

## 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. Cost allocation rules for network upgrades can be found in PJM Manual 14A, Attachment B. 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.

An Interconnection Customer with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

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.

The conduct of stability and light load analysis as required under the PJM planning process is not performed during the Generation Interconnection Feasibility Study phase of the PJM study process. Additional reinforcement requirements for this Interconnection Request may be defined during the System Impact Study phase of the project.

## General

<b>Queue Number</b>	<b>AE1-201</b>
<b>Project Name</b>	Marengo
<b>State</b>	Illinois
<b>County</b>	McHenry
<b>Transmission Owner</b>	ComEd
<b>MFO</b>	40
<b>MWE</b>	20
<b>MWC</b>	16.4
<b>Fuel</b>	Solar
<b>Basecase Study Year</b>	2022

## Primary Point of Interconnection

Queue Position AE1-201, proposes to add 20 MW solar facility, to the primary POI of a prior queue position AD1-016, a 40 MW solar farm, using the same generator lead. At the time of issuing this report, AD1-016 is in the System Impact Study Phase. Attachment Facilities and Direct Network Upgrades required to interconnect this project included in the scope of the AD1-016 project.

## Cost Summary

The AE1-201 project will be responsible for the following costs:

This is a non-jurisdictional interconnection and the distribution interconnection costs will be covered under a state interconnection process.

In addition, the AE1-201 project may be responsible for a contribution to the following transmission costs

Description	Total Cost
System Upgrades	\$

Cost allocations for these upgrades will be provided in the System Impact Study Report.

## Revenue Metering and SCADA Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

## Network Impacts

The Queue Project AE1-201 was evaluated as a 20 MW (Capacity 16.4 MW) injection at the Marengo; B 138 kV substation in the ComEd area. Project AE1-201 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE1-201 was studied with a commercial probability of 53%. Potential network impacts were as follows:

## Summer Peak Load Flow

### Generation 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

### Potential Congestion due to Local Energy Deliverability

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.

Note: Only the most severely overloaded conditions are listed below. 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 shall study all overload conditions associated with the overloaded element(s) identified.

None

# Short Circuit

No issues identified