



**Generation Interconnection
Feasibility Study Report
for
Queue Project AF1-330
MARENGO
16.4 MW Capacity / 20 MW Energy**

January, 2020

1 General

The Interconnection Customer (IC) has proposed an upgrade to their prior queue solar project to be located in McHenry County, Illinois. AF1-330 requests an increase to a prior queue project of 20 MW with 16.4 MW being recognized by PJM as Capacity. The combined queue projects will have a total capability of 40 MWE after the upgrade. The proposed in-service date for this project is September 15, 2021. This study does not imply a TO commitment to this in-service date.

The IC has proposed a 20 MW solar facility with a 34kV interconnection at TSS 123 Marengo in the ComEd service territory. The physical interconnection is deemed to be **NOT FERC jurisdictional** and the scope of the Attachment Facilities, along with cost and schedule, will be determined under ComEd's state tariff process.

This Generation Interconnection Feasibility Study provides analysis results to aid the IC in assessing the practicality and cost of incorporating the facility into the PJM system. This study was limited to load flow analyses of probable contingencies.

Queue Number	AF1-330
Project Name	MARENGO
State	Illinois
County	McHenry
Transmission Owner	ComEd
MFO	40
MWE	20
MWC	16.4
Fuel	Solar
Basecase Study Year	2023

1.1 Point of Interconnection

AF1-330 will interconnect with the ComEd distribution system at the Marengo 34.5 kV substation which is the same POI as prior queue project.

1.2 Cost Summary

To be provided as part of the ComEd state tariff process

2 Transmission Owner Attachment Facilities Scope of Work

None

3 Schedule

To be provided as part of the ComEd state tariff process

4 Interconnection Customer Requirements

ComEd interconnection requirements can be found at <https://www.pjm.com/planning/design-engineering/to-tech-standards/private-comed.aspx>

To the extent that these Applicable Technical Requirements and Standards may conflict with the terms and conditions of the Tariff, the Tariff shall control.

ComEd distribution line drops to move customer cranes and heavy equipment is not part of PJM process. The customer should directly contact ComEd New Business Group to arrange for line drops, if needed.

5 Revenue Metering and SCADA Requirements

PJM 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.

6 Network Impacts

The Queue Project AF1-330 was evaluated as a 20.0 MW (Capacity 16.4 MW) injection at the Marengo 34.5 kV substation in the ComEd area. Project AF1-330 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF1-330 was studied with a commercial probability of 0.53. Potential network impacts were as follows:

Summer Peak Load Flow

7 Generation Deliverability

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

None

8 Multiple Facility Contingency

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

None

9 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

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

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
44538303	930480	AB1-089 TAP	345.0	CE	270916	WAYNE ; B	345.0	CE	1	COMED_P1-2_345-L97116__R_FSA	operation	2058.0	99.93	100.0	AC	1.6

11 System Reinforcements

ID	Index	Facility	Upgrade Description	Cost
None			TOTAL COST	\$0

Affected Systems

12 Affected Systems

12.1 LG&E

LG&E Impacts to be determined during later study phases (as applicable).

12.2 MISO

MISO Impacts to be determined during later study phases (as applicable).

12.3 TVA

TVA Impacts to be determined during later study phases (as applicable).

12.4 Duke Energy Progress

Duke Energy Progress Impacts to be determined during later study phases (as applicable).

12.5 NYISO

NYISO Impacts to be determined during later study phases (as applicable).

Contingency Name	Contingency Definition
COMED_P1-2_345-L97116__-R_FSA	CONTINGENCY 'COMED_P1-2_345-L97116__-R_FSA' TRIP BRANCH FROM BUS 270759 TO BUS 270883 CKT 1 / U3-021 SILVE; R 345 END

Short Circuit

13 Short Circuit

The following breakers are overdutied:

None