

Series reactor along Crete-St John 345 kV line and reconductor Crete to St John 345kV line

General Information

Proposing entity name	NXTMID
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	NEETMA IN Proposal 3
PJM Proposal ID	117
Project title	Series reactor along Crete-St John 345 kV line and reconductor Crete to St John 345kV line
Project description	Reconductor ComEd 4.97 miles of the existing Crete - St John line which goes from Crete to IL/IN State Line with 2x1277 kcmil ACSR. Reconductor NEETMA IN 6.95 miles of the existing Crete – St John line which goes from IL/IN State Line to St. John with 2x1033 Curlew ACSS. Install a new 4.76+ Ohm (0.4%, 100 MVA base) series reactor along the Crete - St. John 345 kV line
Email	eric.hodges@nexteraenergy.com
Project in-service date	12/2025
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	Project addressing reliability needs documented by PJM. While this project is interregional in that there are transmission components in both MISO and PJM, the need that is being addressed is only a PJM need.

Project Components

1. Crete To St. John 345 kV Transmission Line Upgrade - NEETMA IN Only
2. Crete - St. John (ComEd) 345 kV Transmission Line upgrade
3. 345 kV Series Reactor

Transmission Line Upgrade Component

Component title	Crete To St. John 345 kV Transmission Line Upgrade - NEETMA IN Only
Project description	Reconductor NEETMA IN 6.95 miles of existing Crete to St John line. NEETMA portion goes from IL/IN State Line to St. John substation owned by NIPSCO. The line will be reconducted using 2x1033 Curlew ACSS HS. Upgrade is for reconductor only (Tower replacement will be part of NEETMA-2021-01 supplemental project).
Impacted transmission line	Crete Bus to St John Bus 345 kV line
Point A	Crete Bus
Point B	St John Bus
Point C	Not Applicable
Terrain description	The terrain along the transmission line right-of-way (ROW) is relatively flat with about 94% of the ROW having a ground slope of 4% or less. Elevations along the ROW range from about 670 feet to 721 feet MSL. Minor tree or other clearing is anticipated to be required for the project. The existing land use adjacent to the ROW is primarily cultivated crops with some developed lands.

Existing Line Physical Characteristics

Operating voltage	345 kV
Conductor size and type	Single 1414 kcmil paper expanded ACSR per phase
Hardware plan description	NEET MA IN has received approval for a supplemental project that involves replacing aging infrastructure between of an existing double circuit 345 kV line. This reconductor represents a portion of the supplemental project that is necessary to address the PJM reliability issue, which only involves reconductoring the Crete-St. John section of the 345 kV line.
Tower line characteristics	NEET MA IN has received approval for a supplemental project that involves replacing aging infrastructure between of an existing double circuit 345 kV line. This reconductor represents a portion of the supplemental project that is necessary to address the PJM reliability issue, which only involves reconductoring the Crete-St. John section of the 345 kV line

Proposed Line Characteristics

Designed

Operating

Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	2050.000000	2495.000000
Winter (MVA)	2193.000000	2621.000000
Conductor size and type	1033.5 kcmil Curlew ACSS HS: 2C Bundle	
Shield wire size and type	Utilize existing shield wire to extent practical	
Rebuild line length	6.95 miles	
Rebuild portion description	NEET MA IN has received approval for a supplemental project that involves replacing aging infrastructure between of an existing double circuit 345 kV line. This reconductor represents a portion of the supplemental project that is necessary to address the PJM reliability issue, which only involves reconductoring the Crete-St. John section of the 345 kV line	
Right of way	Segment 1: This five-mile segment, starting from the Illinois/Indiana state line heading East crosses mostly agricultural and developing residential area to the first turn in the ROW. The right of way varies in width between 100 and 150 feet and crosses nine roadways and two railroads. Segment 2: This 1.9 mile stretch to the NE crosses mostly agricultural land and two roadways.	
Construction responsibility	ComEd	
Benefits/Comments	Resolves reliability issues identified per PJM's Generation Deliverability Process. For Construction responsibility due to the PJM form web, we are unable to select NEET MA IN as the entity responsible for this upgrade, please note, NEET MA IN or its affiliates will be responsible in constructing the transmission upgrade for Crete-St. John line.	

Component Cost Details - In Current Year \$

Engineering & design	Detailed cost breakdown is business confidential information.
Permitting / routing / siting	Detailed cost breakdown is business confidential information.
ROW / land acquisition	Detailed cost breakdown is business confidential information.
Materials & equipment	Detailed cost breakdown is business confidential information.
Construction & commissioning	Detailed cost breakdown is business confidential information.

Construction management	Detailed cost breakdown is business confidential information.
Overheads & miscellaneous costs	Detailed cost breakdown is business confidential information.
Contingency	Detailed cost breakdown is business confidential information.
Total component cost	\$5,262,676.00
Component cost (in-service year)	\$5,468,930.00

Transmission Line Upgrade Component

Component title	Crete - St. John (ComEd) 345 kV Transmission Line upgrade
Project description	Reconductor ComEd 4.97 miles of existing Crete – St John line. The ComEd portion of the line goes from Crete substation to the IL/IN State Line. The proposed conductor is 2x1277 kcmil ACSR.
Impacted transmission line	Crete Bus to St John Bus 345 kV line
Point A	Crete Bus
Point B	St John Bus
Point C	Not Applicable
Terrain description	The terrain along the transmission line right-of-way (ROW) is relatively flat with about 94% of the ROW having a ground slope of 4% or less. Elevations along the ROW range from about 670 feet to 721 feet MSL. Minor tree or other clearing is anticipated to be required for the project. The existing land use adjacent to the ROW is primarily cultivated crops with some developed lands.

Existing Line Physical Characteristics

Operating voltage	345
Conductor size and type	Single 1414 kcmil paper expanded ACSR per phase
Hardware plan description	Unknown
Tower line characteristics	Towers are from 1950's

Proposed Line Characteristics

Designed **Operating**

Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	2050.000000	2280.000000
Winter (MVA)	2091.000000	2381.000000
Conductor size and type	1277 kcmil ACSR: 2C Bundle	
Shield wire size and type	Utilize existing shield wire to extent practicable	
Rebuild line length	4.97 miles	
Rebuild portion description	4.97 miles going from Crete Substation to IL/IN State line	
Right of way	Segment 1: This first segment, starting from the Illinois/Indiana state line heading East crosses mostly agricultural and developing residential area to the first turn in the ROW. The right of way varies in width between 100 and 150 feet and crosses nine roadways and two railroads. Segment 2: This 1.9 mile stretch to the NE crosses mostly agricultural land and two roadways.	
Construction responsibility	ComEd	
Benefits/Comments	Resolves reliability issues identified per PJM's Generation Deliverability Process.	
Component Cost Details - In Current Year \$		
Engineering & design	Detailed cost breakdown is business confidential information.	
Permitting / routing / siting	Detailed cost breakdown is business confidential information.	
ROW / land acquisition	Detailed cost breakdown is business confidential information.	
Materials & equipment	Detailed cost breakdown is business confidential information.	
Construction & commissioning	Detailed cost breakdown is business confidential information.	
Construction management	Detailed cost breakdown is business confidential information.	
Overheads & miscellaneous costs	Detailed cost breakdown is business confidential information.	
Contingency	Detailed cost breakdown is business confidential information.	

Total component cost \$6,454,500.00

Component cost (in-service year) \$6,986,558.00

Greenfield Substation Component

Component title 345 kV Series Reactor

Project description Install a new 4.76+ Ohm (0.4%, 100 MVA base) series reactor or equivalent Smartwire device along the Crete - St. John 345 kV line

Substation name Reactor Sub

Substation description Install a new 4.76+ Ohm (0.4%, 100 MVA base) series reactor or equivalent Smartwire device along the Crete - St. John 345 kV line

Nominal voltage AC

Nominal voltage 345

Transformer Information

None

Major equipment description New 4.76+ Ohm (0.4%, 100 MVA base) series reactor or equivalent Smartwire device.

	Normal ratings	Emergency ratings
Summer (MVA)	4000.000000	4000.000000
Winter (MVA)	4000.000000	4000.000000

Environmental assessment

This would be installed inside the proposed State Line Substation-3 terminal. Potential environmental impacts assessment (i.e. environmental impact study requirements, environmental permitting, sediment, and erosion control issues). Fatal flaws have not been identified for the NEET MA proposed State Line substation. Environmental constraints identified are manageable through implementation of NEET MA's environmental avoidance, minimization and mitigation strategy incorporated at the beginning of the routing/siting process. While there is a small NWI wetland mapped at the proposed station, a slight shift in the location may avoid wetland impacts, and if not an alternative location to the east without wetlands is available. Any temporary impacts in the area will be included in the Nationwide Permit application. No streams or associated floodplains are within the proposed substation location. Permanent impacts to wetlands will be avoided and minimized to the extent possible through site specific design, engineering, and structure placement. While there do not appear to be any trees at the proposed substation, the project intends to adhere to tree removal seasonal restriction windows to avoid and minimize impacts to protected birds and bats, such as the Indiana Bat, Northern Long-eared Bat, Bald Eagle, and other common raptors. Erosion control best management practices and setbacks will be engineered and utilized to prevent sedimentation from leaving the site for the protection of aquatic species and to avoid water quality impacts. A Cultural Resource Assessment Survey will be conducted to determine the presence of archeological or culturally sensitive areas and implementation of NEET MA's avoidance strategy. There are no unique or sensitive environmental concerns or impacts with the NEET MA proposed Illinois substation.

Outreach plan

NEETMA IN is committed to working with all interested stakeholders through a robust outreach and education (O&E) program to address/respond to community concerns and inform the public about the project to the greatest extent practicable. NEETMA IN believes a well-designed O&E program can have numerous benefits, including fostering a cooperative relationship with landowners and other stakeholders, expediting the regulatory permitting process, and assisting with project development. In general, the purpose of the community outreach plan is to gain community support for the project, in particular the affected community, to enable NEETMA IN to expeditiously comply with all relevant regulatory requirements that would permit timely construction and operation of the proposed project. Elements of the community outreach plan will include the following: 1) Identify potential issues at an early stage by engagement with key community stakeholders at the outset; 2) Broaden the community engagement process to identify potential and relevant community benefits that can facilitate community support for the proposed project; 3) Develop a broad base of community support for the proposed project before the regulatory agencies; and 4) Develop a comprehensive administrative record documenting the community outreach process that can be presented to the regulatory agency or, in the event of a legal challenge, to the appropriate court. The plan proposes to dedicate considerable time and resources in engaging the community, and specifically the affected community during the planning process to identify highly sensitive areas that have the least amount of cultural, environmental, and social impacts on the community. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then NEETMA IN will involve the community in providing appropriate and practical mitigation measures.

Land acquisition plan	Key elements in NEETMA IN's approach to the landowner negotiation process for this project, and other projects in PJM, include: 1) Proactively conducting a market analysis of land values in the project area; 2) Producing a fair and comprehensive land acquisition plan and schedule for securing necessary land rights and site control; 3) Utilizing local land acquisition teams knowledgeable of the project area; and 4) Taking a transparent approach in discussing the project and NEETMA IN development interests in the subject property. NEETMA IN will negotiate agreements with the landowners of the proposed project area. NEETMA IN's philosophy for landowner relations is to work with residents during all phases of a project to address issues as they arise, before and after acquisition of land rights. NEETMA IN is committed to serving as the point of contact for residents, whether directly or indirectly affected by the project, for the duration of the project. NEETMA IN uses a collaborative and consultative approach to working with landowners, focusing on regular communication, to understand and address issues on an ongoing basis. NEETMA IN is also committed to using design and construction techniques that minimize impacts on private lands, and to restoring the construction sites of the projects to be both good stewards of the environment and good neighbors in the communities in which NEETMA IN live and work.
Construction responsibility	Proposer
Benefits/Comments	The reactor will be placed along the Crete – St. John line. To accommodate reactor operation bypass and switching devices will be added.
Component Cost Details - In Current Year \$	
Engineering & design	Detailed cost breakdown is business confidential information.
Permitting / routing / siting	Detailed cost breakdown is business confidential information.
ROW / land acquisition	Detailed cost breakdown is business confidential information.
Materials & equipment	Detailed cost breakdown is business confidential information.
Construction & commissioning	Detailed cost breakdown is business confidential information.
Construction management	Detailed cost breakdown is business confidential information.
Overheads & miscellaneous costs	Detailed cost breakdown is business confidential information.
Contingency	Detailed cost breakdown is business confidential information.
Total component cost	\$7,838,278.00
Component cost (in-service year)	\$8,091,730.00

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
GD-W2-W5	274750	CRETE EC ;BP	255112	17STJOHN	1	345	217/222	Winter Gen Deliv	Included
GD-W2-W6	274750	CRETE EC ;BP	255112	17STJOHN	1	345	217/222	Winter Gen Deliv	Included

New Flowgates

None

Financial Information

Capital spend start date 01/2023

Construction start date 02/2025

Project Duration (In Months) 35

Additional Comments

All attachments for NEETMA IN-Proposal 3 are Confidential.