

# Swap 345kV transmission line at Green Acres 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 2
PJM Proposal ID	727
Project title	Swap 345kV transmission line at Green Acres 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. Swap the termination into the NIPSCO Green Acres Tap towers from the St. John - Green Acres - Olive line to the University Park - Olive line to create a University Park - Green Acres - Olive line and St. John - Olive line Replace existing 345 kV switch at St. John
Email	eric.hodges@nexteraenergy.com
Project in-service date	12/2024
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. St. John Substation terminal equipment (switch) upgrade to 4000A
4. Green Acres Circuit Swap

## 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.	
<b>Component Cost Details - In Current Year \$</b>		
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**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	345.000000	345.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
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.	
<b>Component Cost Details - In Current Year \$</b>		
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

**Substation Upgrade Component**

Component title	St. John Substation terminal equipment (switch) upgrade to 4000A
Project description	Replace existing 345 kV substation switch at St. John
Substation name	St John 345 kV
Substation zone	NIPSCO
Substation upgrade scope	Replace existing 345 kV substation switch at St. John

**Transformer Information**

None	
New equipment description	St. John Substation terminal equipment (switch) upgrade to 4000A
Substation assumptions	The upgrade will leverage the substation in its existing form with no additional assumptions. Upgrade only consists of replacing the terminal equipment to a 4000A switch.
Real-estate description	The upgrade will leverage the substation in its existing form with no additional assumptions. Upgrade only consists of replacing the terminal equipment to a 4000A switch.
Construction responsibility	NIPSCO
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	\$500,000.00
Component cost (in-service year)	\$541,216.00

**Transmission Line Upgrade Component**

Component title	Green Acres Circuit Swap
Project description	Outside of the Green Acres substation, swap the NEETMA IN circuits. The proposed swap will result in the North Circuit going from Crete to St John to Olive and the South Circuit going from University Park to Green Acres to Olive.
Impacted transmission line	Crete – St John – Green Acres – Olive, University Park – Olive
Point A	Green Acres
Point B	Olive
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 New structures will be installed to accommodate the southern University Park – Olive line being cut into the Green Acres substation. Tubular steel structures will be used and bundled 1033 kcmil ACSS conductor installed. Hardware will be installed on the new section of line.

Tower line characteristics This section of line will have recently replaced due to the supplemental project.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	345.000000	345.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
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	0	
Rebuild portion description	Outside of the Green Acres substation, swap the NEETMA IN circuits. 3 pole structures will be used to cut the southern circuit into Green Acres, and new intermediate structures will be installed between the line and station. The proposed swap will result in the North Circuit going from Crete to St John to Olive and the South Circuit going from University Park to Green Acres to Olive.	
Right of way	Segment 1: This segment leaves the St. John substation to the NE, crosses through a residential area and continues through mostly agricultural area and ends just beyond the Erie Lackawanna Trail for a total of 1 mile. This segment crosses 4 roads and the Erie Lackawanna Trail. Segment 2: This segment continues to the east for 5.4 miles over a mix of some residential area and mostly agricultural lands and crosses 11 roads and varies between 100 and 125 ft in width before reaching the Green Acres substation.	
Construction responsibility	ComEd	



## Benefits/Comments

For Construction responsibility due to the PJM form web, we are unable to select NEET MA as the entity responsible for this upgrade, please note, NEET MA IN will be responsible in constructing the transmission upgrade for Green Acres Circuit Swap. Swap has no ratings. Conductor, Ratings and supporting information provided for the swap are those of the NEETMA portion of the University Park – Olive line after implementation of the supplemental project NEETMA-2021-01.

## 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	\$2,785,123.00
Component cost (in-service year)	\$2,924,551.00

## 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 02/2024

Project Duration (In Months) 23

## **Additional Comments**

All attachments for NEETMA IN-Proposal 2 are Confidential.