

# Reconductor 345kV E. Frankfort to Crete to St John transmission 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 1
PJM Proposal ID	176
Project title	Reconductor 345kV E. Frankfort to Crete to St John transmission 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. Reconductor ComEd 12.7 miles of existing line from Crete - E Frankfort 345 kV line with 2x1277 kcmil ACSR. Reconductor ComEd existing line (approx. 5.41 mi) from E Frankfort to University Park 345 kV line with 2x1277 ACSR Replace existing 345 kV switch at St. John
Email	eric.hodges@nexteraenergy.com
Project in-service date	12/2023
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. E Frankfort-Crete 345 kV Upgrade Only
4. University Park – E Frankford Reconductoring Upgrade Only
5. St. John Substation terminal equipment (switch) upgrade to 4000A

## 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

	<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	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**

	<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

**Transmission Line Upgrade Component**

Component title	E Frankfort-Crete 345 kV Upgrade Only
Project description	Reconductor ComEd 12.68 miles of existing line from E Frankfort - Crete 345 kV line.
Impacted transmission line	East Frankfort Bus to Crete Bus 345 kV line
Point A	East Frankfort Bus
Point B	Crete 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	Unknown
Hardware plan description	Unknown
Tower line characteristics	Towers are from the 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)	1679.000000	2058.000000
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	12.68 miles	
Rebuild portion description	Reconductor ComEd 12.68 miles of existing line from E Frankfort - Crete 345 kV line.	
Right of way	Segment 1: This 6.4 mile segment starts in Franklin Township, IL exiting the East Frankfort substation and following a ROW that varies in width between 200 and 150 ft in width southeast to the Canadian National railroad line .25 mile beyond the existing Woodhill substation. This segment is mostly all agricultural and crosses 17 roadways and 2 railroads. Segment 2: This 6.2 mile stretch heads east from the Canadian National rail line, crossing mostly agricultural lands before reaching the Crete substation. This segment crosses 9 roadways and 1 railroad	
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	\$16,484,000.00
Component cost (in-service year)	\$17,842,812.00

**Transmission Line Upgrade Component**

Component title	University Park – E Frankford Reconductoring Upgrade Only
Project description	Reconductor ComEd 5.41 miles of existing line from University Park to E Frankfort 345 kV line.
Impacted transmission line	University Park to Frankford 345 kV line
Point A	University Park
Point B	Frankford
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	Unknown
Hardware plan description	Unknown
Tower line characteristics	Towers are from the 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)	1679.000000	2058.000000
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	5.41 miles	
Rebuild portion description	University Park to E Frankford 345 kV line is expected to be reconducted as a result of the E Frankford – Crete upgrade based on communications with ComEd. Reconductor length is 5.41 miles.	
Right of way	Segment 1: This 5.4-mile segment starts at the University Park substation and heads NW crossing mostly agricultural lands, crosses 15 roads and 1 railroad. This segment varies in width between 200 and 250 ft.	
Construction responsibility	ComEd	
Benefits/Comments	Based on coordination with ComEd, they have indicated that reconductoring of the E Frankford to Crete 345 kV line would require reconductoring of the University Park to E Frankford 345 kV 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	\$7,033,000.00
Component cost (in-service year)	\$7,612,745.00

**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

## 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	02/2023
Project Duration (In Months)	11

## Additional Comments

All attachments for NEETMA IN-Proposal 1 are Confidential.