

Northwest Ohio 345 kV

General Information

Proposing entity name	Proprietary & Confidential Information
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Proprietary & Confidential Information
Company proposal ID	Proprietary & Confidential Information
PJM Proposal ID	479
Project title	Northwest Ohio 345 kV
Project description	Construct a new 345 kV substation at Varner and a new single-circuit 345 kV transmission line between Varner and Melbourne.
Email	Proprietary & Confidential Information
Project in-service date	06/2031
Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary & Confidential Information

Project Components

1. 121) Varner - Melbourne 345 kV
2. 120) Varner 345 kV Substation
3. 155) South Butler - Dunton Lake 345 kV loop-in Double Circuit
4. 186) South Butler - Varner 345 kV loop-in
5. 122) Melbourne 345 kV Substation Upgrade

Greenfield Transmission Line Component

Component title	121) Varner - Melbourne 345 kV	
Project description	Proprietary & Confidential Information	
Point A	Varner	
Point B	Melbourne	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	2228.000000	2292.000000
Winter (MVA)	2396.000000	2452.000000
Conductor size and type	2xCurlew ACSS	
Nominal voltage	AC	
Nominal voltage	345	
Line construction type	Overhead	
General route description	The proposed Varner - Melbourne 345 kV transmission line component originates at the Varner substation and terminates at the Melbourne substation, traversing through 5 counties, including Dekalb County, Indiana; Defiance County, Williams County, Henry County, and Fulton County, Ohio. The line is proposed as an overhead single circuit 345 kV transmission facility. The route is primarily located within agricultural, forested, and developed terrain and follows existing right-of-way for approximately 12% of the route and will require new right-of-way for approximately 88% of the route. The component generally follows existing infrastructure corridors where practicable, such as major roadways, existing transmission corridors, rail corridors, and utility rights-of-way, in order to minimize environmental and land use impacts.	

Terrain description	The proposed Varner - Melbourne 345 kV component traverses terrain that is generally characterized by relatively flat terrain, consisting primarily of agricultural, forested, and developed land uses. The topography along the route includes low-relief plains, spanning the Huron/Erie Lake Plains (64%) and Eastern Corn Belt Plains (36%) ecoregions. Subsurface conditions generally consist of shale and black-shale overlain by Blount loam, Latty silty clay, and Hoytville clay loam. Population and development characteristics along the proposed route consist of predominantly rural and undeveloped areas, with limited residential presence and minimal population exposure along the proposed route . Please see Attachment 14 for detailed route analysis.
Right-of-way width by segment	The proposed 345 kV transmission line will utilize a 150-foot-wide right-of-way (ROW) along the route. Approximately 12% of the proposed route is anticipated to parallel, co-locate within, or expand upon existing transmission or utility corridors, while the remaining approximately 88% of the route will consist of new greenfield ROW.
Electrical transmission infrastructure crossings	See Attachment 4 (Google Earth .kmz file) for crossing locations.
Civil infrastructure/major waterway facility crossing plan	See Attachment 5 (Crossing Plan) and Attachment 4 (Google Earth .kmz file) for crossing plans and locations.
Environmental impacts	Environmental constraints associated with the proposed Varner - Melbourne 345 kV component were evaluated within the vicinity of the proposed project centerline and are considered manageable through avoidance, minimization, and mitigation during routing, siting, design, and permitting. The proposed component was developed to maximize the use of existing utility and transportation corridors, previously disturbed areas, and compatible land uses, where practicable. Route alternatives were evaluated through environmental screening, aerial imagery review, GIS analysis, and constructability assessments. The project evaluated opportunities for co-location with existing infrastructure, land use considerations, permitting considerations, and other project-specific factors to avoid and minimize impacts to sensitive environmental resources, to the extent practicable. Additional details on preliminary routing and feasibility are included in Attachment 14 (Routing Supplemental Attachment). Industry-standard environmental construction Best Management Practices and Time-of-Year restrictions will be implemented to minimize impacts to natural and cultural resources encountered by the proposed project. Based on environmental reviews completed to date, no fatal environmental flaws or significant constraints have been identified that would preclude permitting, construction, or operation of the Project. Identified impacts are anticipated to be manageable through standard permitting, agency coordination, route refinement, and mitigation. Additional details on the anticipated environmental permitting approach and a description of the federal, state, and local regulatory environment is included in Attachment 8 (Environmental and Permitting Plan).
Tower characteristics	Delta SWAK. See structure drawing set included in Attachment 10.
Construction responsibility	Proprietary & Confidential Information

Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$141,888,337.00
Component cost (in-service year)	\$152,416,977.00
Greenfield Substation Component	
Component title	120) Varner 345 kV Substation
Project description	Proprietary & Confidential Information
Substation name	Varner
Substation description	Construct the new Varner 345kV substation with a four-string, breaker-and-a-half configuration, comprising 11 breakers and accommodating the South Butler-Dutton Lake 345 kV Circuits 1 and 2, the South Butler-Varner 345 kV line, the new Varner-Melbourne 345 kV line, and exit to the Varner 345/138 kV transformer.
Nominal voltage	AC
Nominal voltage	345
Transformer Information	

	Name	Capacity (MVA)
Transformer	N/A	N/A
	High Side	Low Side Tertiary
Voltage (kV)	345	N/A N/A
Major equipment description	AC Air Insulated Substation (AIS): New proposed 345kV substation. New 765kV Breaker and a half (BAAH) substation including eleven (11) 765kV-5000A-63kAIC breakers with a future 12th breaker to be added later for final buildout. Lines outgoing to Dunton Lake #1, Dunton Lake #2, Butler #1, Butler #2, Butler #3, Brownfield (existing) Varner, and Melbourne 345kV substations. This configuration allows for four (4) total BAAH bays at the substation when fully built out.	
	Normal ratings	Emergency ratings
Summer (MVA)	2228.000000	2292.000000
Winter (MVA)	2396.000000	2452.000000
Environmental assessment	Environmental constraints were evaluated within the proposed substation site and are considered manageable through avoidance, minimization, and mitigation measures. The parcel contains four NWI-mapped wetlands. According to FEMA data, a small portion of the proposed substation layout may contain a 100-year floodplain. However, no regulated floodways were identified. No major watercourses are located within the parcel, although overland flow is assumed to drain to Sol Shank Ditch. No fatal flaws have been identified. Based on publicly available information, no previously recorded archaeological sites, cemeteries, or historic districts are located within the immediate vicinity of the site. However, one undetermined historic property was identified by the SHPO, in the vicinity of the site. Six federally listed species (two endangered, two proposed endangered, one proposed threatened, and one experimental population) have known ranges in the area, but no critical habitat has been identified within the vicinity of the site. If suitable habitat is identified or regulations change, agency coordination and species-specific surveys will be conducted. The project intends to follow recommended tree-clearing windows and seasonal restrictions to minimize impacts to federally listed bats, migratory birds, and other protected species. Standard construction BMPs, along with avoidance and minimization measures, will be implemented to prevent impacts to natural resources to the maximum extent practicable. There are no environmental concerns that cannot be addressed through standard agency coordination and mitigation. No major federal action triggering NEPA is anticipated. See Attachment 08 - Permitting Plan	

Outreach plan	The proposer is committed to informing the public about the project to the greatest extent practicable while working with all interested stakeholders including landowners through a robust public outreach program to address and respond to community concerns. A well-designed public outreach program can have numerous benefits, including fostering cooperative relationships 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 the affected communities, the proposer's public outreach plan will educate the public and relevant stakeholders on specific project details to enable timely regulatory approvals and construction activities. Elements of the public 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 outreach 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 in order to develop a project that has the least amount of cultural, environmental, and social impacts. The plans will reflect avoidance of impacts rather than mitigation. However, in some cases, if avoidance is not possible, then the proposer will involve landowners and other stakeholders in providing appropriate and practical mitigation measures. Public outreach activities by the proposer will begin following project award.
Land acquisition plan	See attachment 9.
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information

Overheads & miscellaneous costs	Proprietary & Confidential Information	
Contingency	Proprietary & Confidential Information	
Total component cost	\$57,146,938.00	
Component cost (in-service year)	\$63,193,187.00	
Transmission Line Upgrade Component		
Component title	155) South Butler - Dunton Lake 345 kV loop-in Double Circuit	
Project description	Proprietary & Confidential Information	
Impacted transmission line	South Butler to Dunton Lake 345 kV	
Point A	South Butler	
Point B	Dunton Lake	
Point C		
Terrain description	The proposed transmission line connections are located primarily within the existing South Butler-Dunton 345 kV transmission corridor and immediately adjacent to the proposed Varner 345 kV Substation. Terrain is generally consistent with the existing transmission corridor and substation area.	
Existing Line Physical Characteristics		
Operating voltage	345	
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Hardware plan description	Matches existing facilities.	
Tower line characteristics	Matches existing facilities.	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	345.000000	345.000000

	Normal ratings	Emergency ratings
Summer (MVA)	2228.000000	2292.000000
Winter (MVA)	2396.000000	2452.000000
Conductor size and type	Matches existing facilities.	
Shield wire size and type	Matches existing facilities.	
Rebuild line length	0.16	
Rebuild portion description	Cuts into existing South Butler to Dunton Lake 345 kV Transmission line and routes directly into and out of the new Varner 345 kV Substation; Creates a new South Butler to Varner 345 kV circuit connection and a new Dunton to Varner 345 kV circuit connection.	
Right of way	150-foot ROW will be required for the new line length	
Construction responsibility	Proprietary & Confidential Information	
Benefits/Comments	Proprietary & Confidential Information	
Component Cost Details - In Current Year \$		
Engineering & design	Proprietary & Confidential Information	
Permitting / routing / siting	Proprietary & Confidential Information	
ROW / land acquisition	Proprietary & Confidential Information	
Materials & equipment	Proprietary & Confidential Information	
Construction & commissioning	Proprietary & Confidential Information	
Construction management	Proprietary & Confidential Information	
Overheads & miscellaneous costs	Proprietary & Confidential Information	
Contingency	Proprietary & Confidential Information	
Total component cost	\$3,500,000.00	
Component cost (in-service year)	\$3,883,263.00	

Transmission Line Upgrade Component

Component title	186) South Butler - Varner 345 kV loop-in	
Project description	Proprietary & Confidential Information	
Impacted transmission line	South Butler to Varner 345 kV	
Point A	South Butler	
Point B	Varner	
Point C		
Terrain description	The proposed transmission line connections are located primarily within the existing South Butler-Varner 345 kV transmission corridor and immediately adjacent to the proposed Varner 345 kV Substation. Terrain is generally consistent with the existing transmission corridor and substation area.	
Existing Line Physical Characteristics		
Operating voltage	345	
Conductor size and type	Incumbent / Transmission Owner to select conductor to achieve the required ratings	
Hardware plan description	Matches existing facilities	
Tower line characteristics	Matches existing facilities	
Proposed Line Characteristics		
	Designed	Operating
Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	2228.000000	2292.000000
Winter (MVA)	2396.000000	2452.000000
Conductor size and type	Matches existing facilities	

Shield wire size and type	Matches existing facilities
Rebuild line length	.31
Rebuild portion description	Cuts into existing South Butler to Varner 345 kV Transmission line and routes directly into and out of the new Varner 345 kV Substation; Creates a new South Butler to new Varner 345 kV circuit connection and a new Varner to new Varner 345 kV circuit connection.
Right of way	150-foot ROW will be required for the new line length
Construction responsibility	Proprietary & Confidential Information
Benefits/Comments	Proprietary & Confidential Information
Component Cost Details - In Current Year \$	
Engineering & design	Proprietary & Confidential Information
Permitting / routing / siting	Proprietary & Confidential Information
ROW / land acquisition	Proprietary & Confidential Information
Materials & equipment	Proprietary & Confidential Information
Construction & commissioning	Proprietary & Confidential Information
Construction management	Proprietary & Confidential Information
Overheads & miscellaneous costs	Proprietary & Confidential Information
Contingency	Proprietary & Confidential Information
Total component cost	\$3,150,000.00
Component cost (in-service year)	\$3,494,936.00
Substation Upgrade Component	
Component title	122) Melbourne 345 kV Substation Upgrade
Project description	Proprietary & Confidential Information
Substation name	Melbourne

Substation zone	ATSI		
Substation upgrade scope	Add one (1) 345kV breaker to the switchyard to create one (1) additional line terminal.		
Transformer Information			
	Name	Capacity (MVA)	
Transformer	N/A	N/A	
	High Side	Low Side	Tertiary
Voltage (kV)	N/A	N/A	N/A
New equipment description	Add (1) 345kV, 5000A, 63kAIC breaker and (1) 345kV line.		
Substation assumptions	Assumes required equipment upgrades occur in existing footprint. Note that this substation has not been built yet and assumptions have been based on available data.		
Real-estate description	Proposed upgrade does not require additional real estate acquisition		
Construction responsibility	Proprietary & Confidential Information		
Benefits/Comments	Proprietary & Confidential Information		
Component Cost Details - In Current Year \$			
Engineering & design	Proprietary & Confidential Information		
Permitting / routing / siting	Proprietary & Confidential Information		
ROW / land acquisition	Proprietary & Confidential Information		
Materials & equipment	Proprietary & Confidential Information		
Construction & commissioning	Proprietary & Confidential Information		
Construction management	Proprietary & Confidential Information		
Overheads & miscellaneous costs	Proprietary & Confidential Information		
Contingency	Proprietary & Confidential Information		

Total component cost	\$3,750,000.00
Component cost (in-service year)	\$4,160,638.00

Congestion Drivers

None

Existing Flowgates

None

New Flowgates

Proprietary & Confidential Information

Financial Information

Capital spend start date	02/2027
Construction start date	06/2030
Project Duration (In Months)	52

Cost Containment Commitment

Cost cap (in current year)	Proprietary & Confidential Information
Cost cap (in-service year)	Proprietary & Confidential Information

Components covered by cost containment

1. 121) Varner - Melbourne 345 kV - PROPOSER
2. 120) Varner 345 kV Substation - PROPOSER

Cost elements covered by cost containment

Engineering & design	Yes
Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	No
AFUDC	No
Escalation	No
Additional Information	Proprietary & Confidential Information
Is the proposer offering a binding cap on ROE?	Yes
Would this ROE cap apply to the determination of AFUDC?	No
Would the proposer seek to increase the proposed ROE if FERC finds that a higher ROE would not be unreasonable?	No
Is the proposer offering a Debt to Equity Ratio cap?	Proprietary & Confidential Information
Additional cost containment measures not covered above	Proprietary & Confidential Information

Additional Comments

As per confirmation by PJM, the Project Capital Expenditures Section will be automatically redacted by PJM.