

# Barron Transmission Project

## General Information

Proposing entity name	CONFIDENTIAL INFORMATION
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	CONFIDENTIAL INFORMATION
Company proposal ID	CONFIDENTIAL INFORMATION
PJM Proposal ID	27
Project title	Barron Transmission Project
Project description	The Barron transmission project consists of a the following components: 1) new 765/345kV Barron substation, 2) A new double circuit 345kV transmission line from the new Barron Substation to the existing Hayden Substation, 3) Splitting the existing Conesville - Hyatt 345kV single circuit line and looping it into the existing Vassel substation, 4) Sag studys for the Genoa - Westar and Genoa - Spring Road 138kV transmission lines to increase their ratings, 5) Reconductoring the existing Maliszewski - Polaris and Polaris - Westar 138kV transmission lines.
Email	CONFIDENTIAL INFORMATION
Project in-service date	06/2028
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	CONFIDENTIAL INFORMATION

## Project Components

1. Hayden Substation Upgrade
2. Barron Substation
3. Barron - Hayden Double Circuit 345kV Transmission Line

4. Vassell Substation Upgrade
5. Marysville - Flatlick 765kV T-Line Interconnect
6. Vassell - Conesville 345kV Transmission Line
7. Vassell - Hyatt 345kV Transmission Line
8. Conesville - Hyatt 345kV Interconnect
9. Genoa - Westar 138kV Sag Study
10. Genoa - Spring Road Switch 138kV Sag Study
11. Maliszewski - Polaris 138kV Reconductor
12. Polaris - Westar 138kV Reconductor

### Substation Upgrade Component

Component title	Hayden Substation Upgrade
Project description	CONFIDENTIAL INFORMATION
Substation name	Hayden 345kV Substation
Substation zone	1253
Substation upgrade scope	The Hayden 345kV substation upgrade consists of adding one additional bay on the west side of the substation (within its existing footprint) and converting the station to a breaker and a half layout. Two new positions will be added, one in the new bay and one in an existing bay, to terminate the new Barron - Hayden double circuit 345kV transmission line.

### Transformer Information

None	
New equipment description	345kV Circuit Breakers (6): 3000A continuous current rating 345kV Circuit Breaker Isolation Disconnect Switches & associated jumper assemblies: 3000A continuous current rating, 1792 MVA rating, and a short circuit current rating of 63kA.
Substation assumptions	The substation can be expanded to the northwest to accommodate the new connections within it's existing footprint.
Real-estate description	N/A
Construction responsibility	CONFIDENTIAL INFORMATION

Benefits/Comments CONFIDENTIAL INFORMATION

**Component Cost Details - In Current Year \$**

Engineering & design CONFIDENTIAL INFORMATION

Permitting / routing / siting CONFIDENTIAL INFORMATION

ROW / land acquisition CONFIDENTIAL INFORMATION

Materials & equipment CONFIDENTIAL INFORMATION

Construction & commissioning CONFIDENTIAL INFORMATION

Construction management CONFIDENTIAL INFORMATION

Overheads & miscellaneous costs CONFIDENTIAL INFORMATION

Contingency CONFIDENTIAL INFORMATION

Total component cost \$14,105,310.00

Component cost (in-service year) \$14,960,301.90

**Greenfield Substation Component**

Component title Barron Substation

Project description CONFIDENTIAL INFORMATION

Substation name Barron Substation

Substation description The Barron Substation will consist of a 3-position double breaker 765kV yard, a 765/345kV transformer, and a 3-position 345kV ringbus.

Nominal voltage AC

Nominal voltage 765/345

**Transformer Information**

**Name Capacity (MVA)**

Transformer	Barron Transformer	2403	
	<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	765	345	
Major equipment description	765kV circuit breakers (6) will have a continuous current rating of 4000A, a 5300 MVA rating, and a short circuit current rating of 63kA. 765kV terminal equipment will be rated at 4000A. 345kV circuit breakers (3) will have a continuous current rating of 5000A, a 2987 MVA rating, and a short circuit current rating of 63kA. 345kV terminal equipment will be rated at 5000A.		
	<b>Normal ratings</b>	<b>Emergency ratings</b>	
Summer (MVA)	5300.000000	5300.000000	
Winter (MVA)	5300.000000	5300.000000	
Environmental assessment	<p>The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings.</p>		
Outreach plan	<p>Proposer will identify and engage stakeholders, such as community officials and landowners within the Project area, early in the process and maintain an active dialogue throughout. Public meetings may be held to offer a venue for landowners and other interested community members to learn about the Project and for Proposer to learn more about specific landowner and community preferences. Proposer plans to make information available on its website and provide notification of public meetings to landowners within the Project area as required in the siting approval process.</p>		

Land acquisition plan	The Project will be located on new right-of-way to be purchased by Proposer. In addition, Proposer will procure any necessary easements required to access the site. Proposer will assign a Right-of-Way Manager to oversee all real estate related activities for the Project including appraisals, title work, surveying, land acquisition and restoration. A right-of-way agent will contact the property owner(s) in person to explain the Project and, as necessary, secure permission to conduct surveys, archaeological studies, etc. The right-of-way agent will be the primary point of contact to negotiate with the property owner to acquire the substation site and any required easements on a mutually agreeable basis. To the extent that negotiations reach an impasse, Proposer will be able to pursue eminent domain. The right-of-way agents will continue to act as a liaison with the property owners during construction and through the restoration process.
Construction responsibility	CONFIDENTIAL INFORMATION
Benefits/Comments	CONFIDENTIAL INFORMATION
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$112,012,228.00
Component cost (in-service year)	\$118,689,156.50
<b>Greenfield Transmission Line Component</b>	
Component title	Barron - Hayden Double Circuit 345kV Transmission Line
Project description	CONFIDENTIAL INFORMATION

Point A Barron  
 Point B Hayden  
 Point C

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1793.000000	1793.000000
Winter (MVA)	1793.000000	1793.000000
Conductor size and type	Double Bundle 954kcmil "Cardinal" ACSS/TW MA3	
Nominal voltage	AC	
Nominal voltage	345	
Line construction type	Overhead	
General route description	<p>The Barron - Hayden route heads east out of the new Barron Substation and traverses through farmland and undeveloped land for approximately 12.7 miles before terminating at the Hayden Substation. The route does not cross any major waterways or major infrastructure. There are no habitable structures within the right of way and route crosses 49 parcels, with a total of 33 landowners. Based on desktop level data for mapped wetlands and floodplains, structures were sited such that there will be no permanent impact to these areas. There are no FAA regulated airports within the vicinity of the route.</p>	
Terrain description	The terrain is flat farmland.	
Right-of-way width by segment	The right of way for the entire line would be 150 feet.	
Electrical transmission infrastructure crossings	Over the Darby Township - New California 69kV transmission line, Over the the National - Tangy 138kV transmission line	
Civil infrastructure/major waterway facility crossing plan	<p>The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and county roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.</p>	

Environmental impacts	<p>The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings. The project will apply for coverage under the Ohio EPA general construction storm water permit. The timing of construction will be executed in accordance with U.S. Fish and Wildlife Service and Ohio Department of Natural Resources criteria.</p>
Tower characteristics	<p>The preliminary design for the double circuit transmission line utilizes tubular steel monopole structures with braced post insulators attached via the pole shaft in a vertical configuration. The dead end structures shall primarily be self-supported 2-pole deadends with strain insulators attached via the pole shaft in a vertical configuration. The transmission line will utilize horizontally spaced double-bundle 954 kcmil "Cardinal" ACSS/TW MA3 conductor and two optical groundwires.</p>
Construction responsibility	CONFIDENTIAL INFORMATION
Benefits/Comments	CONFIDENTIAL INFORMATION
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION

Total component cost	\$36,231,756.00
Component cost (in-service year)	\$38,324,114.20

### **Substation Upgrade Component**

Component title	Vassell Substation Upgrade
Project description	CONFIDENTIAL INFORMATION
Substation name	Vassell Substation
Substation zone	1253
Substation upgrade scope	The Vassell345kV substation upgrade consists of adding two additional bays on the south side of the substation (within its existing footprint). Two new positions will be added, one in each bay to terminate the new Vassell - Conesville and Vassell - Hyatt single circuit 345kV transmission lines.

### **Transformer Information**

None	
New equipment description	345kV circuit breakers (4) will have a continuous current rating of 3000A, a 1793 MVA rating, and a short circuit current rating of 63kA. 345kV terminal equipment will be rated at 3000A.
Substation assumptions	The substation can be expanded to the northwest to accommodate the new connections within it's existing footprint.
Real-estate description	N/A
Construction responsibility	CONFIDENTIAL INFORMATION
Benefits/Comments	CONFIDENTIAL INFORMATION

### **Component Cost Details - In Current Year \$**

Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION

Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$10,970,797.00
Component cost (in-service year)	\$11,635,790.40

**Transmission Line Upgrade Component**

Component title	Marysville - Flatlick 765kV T-Line Interconnect
Project description	CONFIDENTIAL INFORMATION
Impacted transmission line	Marysville - Flatlick 765kV T-Line
Point A	Marysville
Point B	Barron
Point C	Flatlick
Terrain description	The terrain is flat farmland.

**Existing Line Physical Characteristics**

Operating voltage	765
Conductor size and type	N/A
Hardware plan description	N/A
Tower line characteristics	N/A

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	765.000000	765.000000

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	4047.000000	4349.000000
Winter (MVA)	4484.000000	4961.000000
Conductor size and type	Match Existing	
Shield wire size and type	Match existing	
Rebuild line length	0.1 miles	
Rebuild portion description	The existing line will be broken and two new deadend towers will be installed to facilitate looping into the new Barron 765kV Substation.	
Right of way	No new right of way will need to be acquired. The new structures will be installed in the existing right of way and will span into the new Barron substation.	
Construction responsibility	CONFIDENTIAL INFORMATION	
Benefits/Comments	CONFIDENTIAL INFORMATION	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	CONFIDENTIAL INFORMATION	
Permitting / routing / siting	CONFIDENTIAL INFORMATION	
ROW / land acquisition	CONFIDENTIAL INFORMATION	
Materials & equipment	CONFIDENTIAL INFORMATION	
Construction & commissioning	CONFIDENTIAL INFORMATION	
Construction management	CONFIDENTIAL INFORMATION	
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION	
Contingency	CONFIDENTIAL INFORMATION	
Total component cost	\$2,876,529.00	
Component cost (in-service year)	\$3,028,867.70	

## Greenfield Transmission Line Component

Component title	Vassell - Conesville 345kV Transmission Line	
Project description	CONFIDENTIAL INFORMATION	
Point A	Vassell	
Point B	Conesville	
Point C		
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1217.000000	1245.000000
Winter (MVA)	1348.000000	1390.000000
Conductor size and type	Match existing Conesville - Hyatt 345kV line	
Nominal voltage	AC	
Nominal voltage	345	
Line construction type	Overhead	
General route description	<p>The line heads east out of the existing Vassell substation, then proceeds north east for approximately 5 miles before terminating at a dead end structure to interconnect the existing Conesville - Hyatt 345kV line. The route does not cross any major waterways or major infrastructure. There are no habitable structures within the right of way and route crosses 30 parcels, with a total of 18 landowners. Based on desktop level data for mapped wetlands and floodplains, structures were sited such that there will be no permanent impact to these areas. There are no FAA regulated airports within the vicinity of the route.</p>	
Terrain description	The terrain is mainly flat farmland with a few forested areas.	
Right-of-way width by segment	This line will parallel and be offset by approximately 50' to the proposed Vassell - Hyatt 345kV transmission. Due to this, the combined right of way for both of these transmission lines is 200 feet.	
Electrical transmission infrastructure crossings	Under the Kammer - Vassell 765kV transmission line	

Civil infrastructure/major waterway facility crossing plan

The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and county roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.

Environmental impacts

The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings. The project will apply for coverage under the Ohio EPA general construction storm water permit. The timing of construction will be executed in accordance with U.S. Fish and Wildlife Service and Ohio Department of Natural Resources criteria.

Tower characteristics

The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with braced post insulators attached via the pole shaft in a delta configuration. The transmission line will utilize horizontally spaced double-bundle 954 kcmil "Cardinal" ACSS/TW MA3 conductor and two optical groundwires.

Construction responsibility

CONFIDENTIAL INFORMATION

Benefits/Comments

CONFIDENTIAL INFORMATION

**Component Cost Details - In Current Year \$**

Engineering & design

CONFIDENTIAL INFORMATION

Permitting / routing / siting

CONFIDENTIAL INFORMATION

ROW / land acquisition

CONFIDENTIAL INFORMATION

Materials & equipment

CONFIDENTIAL INFORMATION

Construction & commissioning

CONFIDENTIAL INFORMATION

Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$9,919,584.00
Component cost (in-service year)	\$10,492,433.00

**Greenfield Transmission Line Component**

Component title	Vassell - Hyatt 345kV Transmission Line
Project description	CONFIDENTIAL INFORMATION
Point A	Vassell
Point B	Hyatt
Point C	

	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	1217.000000	1245.000000
Winter (MVA)	1348.000000	1390.000000
Conductor size and type	Match existing Conesville - Hyatt 345kV line	
Nominal voltage	AC	
Nominal voltage	345	
Line construction type	Overhead	

General route description	The line heads east out of the existing Vassell substation, then proceeds north east for approximately 5 miles before terminating at a dead end structure to interconnect the existing Conesville - Hyatt 345kV line. The route does not cross any major waterways or major infrastructure. There are no habitable structures within the right of way and route crosses 30 parcels, with a total of 18 landowners. Based on desktop level data for mapped wetlands and floodplains, structures were sited such that there will be no permanent impact to these areas. There are no FAA regulated airports within the vicinity of the route.
Terrain description	The terrain is mainly flat farmland with some forested areas.
Right-of-way width by segment	This line will parallel and be offset by approximately 50' to the proposed Vassell - Conesville 345kV transmission. Due to this, the combined right of way for both of these transmission lines is 200 feet.
Electrical transmission infrastructure crossings	Under the Kammer - Vassell 765kV transmission line.
Civil infrastructure/major waterway facility crossing plan	The proposer will secure crossing and encroachment permits, authorizations and agreements for existing linear infrastructure crossed by the project. The proposer will coordinate with easement holders including; municipal and county roads; oil and gas pipelines; transmission lines, and local distribution utilities (power, sewer, water, gas, fiber, etc.) to not interfere with existing easement rights crossed by the project. The proposer will obtain occupation agreements from municipal and county jurisdictions to place transmission facilities over municipal and county roads. The proposer plans to secure crossing agreements with existing oil and gas pipelines and transmission lines.
Environmental impacts	The proposed Project was sited to avoid and minimize impacts to wetlands or other areas of environmental concern based on GIS data. It is possible that the Project cannot avoid impacts to a limited number of wetlands and waterways. If so, Proposer expects the Project will be subject to regulation under certain permitting programs, namely Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 401 of the Clean Water Act. Proposer will engage a qualified consultant to conduct a wetlands delineation of the selected site/route in order to establish the extent of proposed impacts and the need for specific permits from the state or U.S. Army Corps of Engineers. In addition to the permits described above, Proposer has identified other permits which may be required for the construction of the Project. Proposer considers these permits to be minor due to the more limited effort to prepare applications and the less intensive permitting processes which follow. These include permits related to airspace clearance, stormwater/erosion and sedimentation control, road crossings, and utility and railroad crossings. The project will apply for coverage under the Ohio EPA general construction storm water permit. The timing of construction will be executed in accordance with U.S. Fish and Wildlife Service and Ohio Department of Natural Resources criteria.
Tower characteristics	The preliminary design for the single circuit transmission line utilizes tubular steel monopole structures with braced post insulators attached via the pole shaft in a delta configuration. The transmission line will utilize horizontally spaced double-bundle 954 kcmil "Cardinal" ACSS/TW MA3 conductor and two optical groundwires.

Construction responsibility	CONFIDENTIAL INFORMATION
Benefits/Comments	CONFIDENTIAL INFORMATION
<b>Component Cost Details - In Current Year \$</b>	
Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$9,919,584.00
Component cost (in-service year)	\$10,492,433.00
<b>Transmission Line Upgrade Component</b>	
Component title	Conesville - Hyatt 345kV Interconnect
Project description	CONFIDENTIAL INFORMATION
Impacted transmission line	Conesville - Hyatt
Point A	Conesville
Point B	Hyatt
Point C	
Terrain description	The terrain is flat farmland.

**Existing Line Physical Characteristics**

Operating voltage	345
Conductor size and type	N/A
Hardware plan description	N/A
Tower line characteristics	The existing towers consist of horizontal lattice structures. The two new dead ends could be 3-pole tubular steel structures or horizontal lattice structures.

**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)	1217.000000	1245.000000
Winter (MVA)	1348.000000	1390.000000
Conductor size and type	Match existing	
Shield wire size and type	Match existing	
Rebuild line length	.1 miles	
Rebuild portion description	The upgrade will consist of adding two new dead end structures for the new Vassell to Hyatt and Vassell to Conesville lines to terminate at.	
Right of way	The new structures will be built in the existing right of way.	
Construction responsibility	CONFIDENTIAL INFORMATION	
Benefits/Comments	CONFIDENTIAL INFORMATION	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	CONFIDENTIAL INFORMATION	
Permitting / routing / siting	CONFIDENTIAL INFORMATION	

ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$1,150,612.00
Component cost (in-service year)	\$1,211,547.10

**Transmission Line Upgrade Component**

Component title	Genoa - Westar 138kV Sag Study
Project description	CONFIDENTIAL INFORMATION
Impacted transmission line	Genoa - Westar
Point A	Genoa
Point B	Westar
Point C	
Terrain description	The terrain is urban.

**Existing Line Physical Characteristics**

Operating voltage	138
Conductor size and type	N/A
Hardware plan description	N/A
Tower line characteristics	N/A

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	138.000000	138.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	223.000000	310.000000
Winter (MVA)	281.000000	349.000000
Conductor size and type	Conductor to remain the same as existing	
Shield wire size and type	N/A	
Rebuild line length	N/A	
Rebuild portion description	The transmission line will have a sag study performed to determine if the ratings can be increased.	
Right of way	N/A	
Construction responsibility	CONFIDENTIAL INFORMATION	
Benefits/Comments	CONFIDENTIAL INFORMATION	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	CONFIDENTIAL INFORMATION	
Permitting / routing / siting	CONFIDENTIAL INFORMATION	
ROW / land acquisition	CONFIDENTIAL INFORMATION	
Materials & equipment	CONFIDENTIAL INFORMATION	
Construction & commissioning	CONFIDENTIAL INFORMATION	
Construction management	CONFIDENTIAL INFORMATION	
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION	

Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$100,053.00
Component cost (in-service year)	\$105,351.90

**Transmission Line Upgrade Component**

Component title	Genoa - Spring Road Switch 138kV Sag Study
Project description	CONFIDENTIAL INFORMATION
Impacted transmission line	Genoa - Spring Road Switch
Point A	Genoa
Point B	Spring Road Switch
Point C	
Terrain description	The terrain is urban.

**Existing Line Physical Characteristics**

Operating voltage	138
Conductor size and type	N/A
Hardware plan description	N/A
Tower line characteristics	N/A

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	138.000000	138.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	223.000000	310.000000

Winter (MVA)	281.000000	349.000000
Conductor size and type	The conductor will remain the same as existing.	
Shield wire size and type	N/A	
Rebuild line length	N/A	
Rebuild portion description	The transmission line will have a sag study performed to determine if the ratings can be increased.	
Right of way	N/A	
Construction responsibility	CONFIDENTIAL INFORMATION	
Benefits/Comments	CONFIDENTIAL INFORMATION	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	CONFIDENTIAL INFORMATION	
Permitting / routing / siting	CONFIDENTIAL INFORMATION	
ROW / land acquisition	CONFIDENTIAL INFORMATION	
Materials & equipment	CONFIDENTIAL INFORMATION	
Construction & commissioning	CONFIDENTIAL INFORMATION	
Construction management	CONFIDENTIAL INFORMATION	
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION	
Contingency	CONFIDENTIAL INFORMATION	
Total component cost	\$100,053.00	
Component cost (in-service year)	\$105,351.90	
<b>Transmission Line Upgrade Component</b>		
Component title	Maliszewski - Polaris 138kV Reconductor	
Project description	CONFIDENTIAL INFORMATION	

Impacted transmission line	Maliszewski - Polars
Point A	Maliszewski
Point B	Polaris
Point C	
Terrain description	The terrain along the route is mostly urban.
<b>Existing Line Physical Characteristics</b>	
Operating voltage	138
Conductor size and type	636 ACSR
Hardware plan description	N/A
Tower line characteristics	The majority of the line is constructed of light duty steel poles that are in good condition. Approximately 2,000 feet of transmission line outside of the Maliszewski Substation are on wood poles.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	138.000000	138.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	274.000000	386.000000
Winter (MVA)	274.000000	386.000000
Conductor size and type	636 ACSS "Grosbeak"	
Shield wire size and type	N/A	
Rebuild line length	2.8 miles	
Rebuild portion description	The line will be reconducted with an ACSS conductor that is the same size as the existing ACSR conductor.	

Right of way	N/A
Construction responsibility	CONFIDENTIAL INFORMATION
Benefits/Comments	CONFIDENTIAL INFORMATION

**Component Cost Details - In Current Year \$**

Engineering & design	CONFIDENTIAL INFORMATION
Permitting / routing / siting	CONFIDENTIAL INFORMATION
ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$3,221,713.00
Component cost (in-service year)	\$3,392,331.90

**Transmission Line Upgrade Component**

Component title	Polaris - Westar 138kV Reconductor
Project description	CONFIDENTIAL INFORMATION
Impacted transmission line	Polaris - Westar
Point A	Polaris
Point B	Westar
Point C	
Terrain description	The terrain along the route is mostly urban.

**Existing Line Physical Characteristics**

Operating voltage	138
Conductor size and type	636 ACSR
Hardware plan description	Existing hardware will not be reused.
Tower line characteristics	The line appears to be constructed of light duty steel poles that are in good condition.

**Proposed Line Characteristics**

	<b>Designed</b>	<b>Operating</b>
Voltage (kV)	138.000000	138.000000
	<b>Normal ratings</b>	<b>Emergency ratings</b>
Summer (MVA)	274.000000	386.000000
Winter (MVA)	274.000000	386.000000
Conductor size and type	636 ACSS "Grosbeak"	
Shield wire size and type	N/A	
Rebuild line length	2.8 miles	
Rebuild portion description	The line will be reconducted with an ACSS conductor that is the same size as the existing ACSR conductor.	
Right of way	N/A	
Construction responsibility	CONFIDENTIAL INFORMATION	
Benefits/Comments	CONFIDENTIAL INFORMATION	
<b>Component Cost Details - In Current Year \$</b>		
Engineering & design	CONFIDENTIAL INFORMATION	
Permitting / routing / siting	CONFIDENTIAL INFORMATION	

ROW / land acquisition	CONFIDENTIAL INFORMATION
Materials & equipment	CONFIDENTIAL INFORMATION
Construction & commissioning	CONFIDENTIAL INFORMATION
Construction management	CONFIDENTIAL INFORMATION
Overheads & miscellaneous costs	CONFIDENTIAL INFORMATION
Contingency	CONFIDENTIAL INFORMATION
Total component cost	\$3,221,713.00
Component cost (in-service year)	\$3,392,331.90

## 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
2023W2-N2-ST31	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST30	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST33	243458	05HYATT	246752	05VASSEL	1	345	205	Summer N-1-1	Included
2023W2-N2-ST32	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST24	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST23	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST26	243513	05GENOA	243537	05MALIS	2	138	205	Summer N-1-1	Included
2023W2-N2-ST25	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST28	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST27	243526	05HYATT	243537	05MALIS	2	138	205	Summer N-1-1	Included
2023W2-N2-ST29	243513	05GENOA	243537	05MALIS	2	138	205	Summer N-1-1	Included
2023W2-N2-ST40	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W2-N2-ST42	242939	05MARYSV	243458	05HYATT	1	345	205	Summer N-1-1	Included
2023W2-N2-ST41	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST44	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST43	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST35	243513	05GENOA	243537	05MALIS	2	138	205	Summer N-1-1	Included
2023W2-N2-ST34	243513	05GENOA	243591	05SPRNGR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST37	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST36	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST39	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST38	243458	05HYATT	246752	05VASSEL	1	345	205	Summer N-1-1	Included
2023W2-N1-WT1	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Winter Basecase	Included
2023W2-N2-ST50	243513	05GENOA	243591	05SPRNGR	1	138	205	Summer N-1-1	Included
2023W2-N1-WT3	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Winter Basecase	Included
2023W2-N1-WT2	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Winter Basecase	Included
2023W2-N1-WT5	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Winter Basecase	Included
2023W2-N1-WT4	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Winter Basecase	Included
2023W2-N2-ST46	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST45	243513	05GENOA	243591	05SPRNGR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST48	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST47	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST49	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N1-WT10	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Winter Basecase	Included
2023W2-N1-ST2	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-N1-WT12	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Winter Basecase	Included
2023W2-N1-ST1	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-N1-WT11	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Winter Basecase	Included
2023W2-N1-ST4	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-N1-WT14	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Winter Basecase	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W2-N1-ST3	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-N1-WT1	3290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Winter Basecase	Included
2023W2-N2-WT2	243537	05MALIS	243538	05MALISX	ZB	138	205	Winter N-1-1	Included
2023W2-N1-ST6	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included
2023W2-N2-WT1	243513	05GENOA	243590	05WESTAR	1	138	205	Winter N-1-1	Included
2023W2-N1-ST5	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included
2023W2-N1-WT7	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Winter Basecase	Included
2023W2-N1-WT6	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Winter Basecase	Included
2023W2-N1-WT9	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Winter Basecase	Included
2023W2-N1-WT8	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Winter Basecase	Included
2023W2-N2-WT7	243553	05POLARS	243590	05WESTAR	1	138	205	Winter N-1-1	Included
2023W2-N1-ST11	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-N2-WT6	243537	05MALIS	243538	05MALISX	ZB	138	205	Winter N-1-1	Included
2023W2-N1-ST13	243537	05MALIS	243553	05POLARS	1	138/138	205/205	Summer Base Case	Included
2023W2-N2-WT8	243553	05POLARS	243590	05WESTAR	1	138	205	Winter N-1-1	Included
2023W2-N1-ST12	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-N1-ST15	243590	05WESTAR	243513	05GENOA	1	138/138	205/205	Summer Base Case	Included
2023W2-N1-ST14	243537	05MALIS	243553	05POLARS	1	138/138	205/205	Summer Base Case	Included
2023W2-N1-ST17	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-GD-W19	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Winter Gen Deliv	Included
2023W2-N1-ST16	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-GD-W15	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Winter Gen Deliv	Included
2023W2-GD-W15	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Winter Gen Deliv	Included
2023W2-N2-WT4	243513	05GENOA	243590	05WESTAR	1	138	205	Winter N-1-1	Included
2023W2-N1-ST8	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included
2023W2-GD-S14	243590	05WESTAR	243513	05GENOA	1	138	205	Summer Gen Deliv	Included
2023W2-N2-WT3	243537	05MALIS	243553	05POLARS	1	138	205	Winter N-1-1	Included
2023W2-N1-ST7	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W2-N1-ST10	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-GD-S165	243537	05MALIS	243553	05POLARS	1	138	205	Summer Gen Deliv	Included
2023W2-N2-WT5	243537	05MALIS	243553	05POLARS	1	138	205	Winter N-1-1	Included
2023W2-N1-ST9	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-GD-S186	243590	05WESTAR	243513	05GENOA	1	138	205	Summer Gen Deliv	Included
2023W2-GD-W155	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Winter Gen Deliv	Included
2023W2-GD-W153	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Winter Gen Deliv	Included
2023W2-N1-ST22	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-N1-ST21	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-N1-ST24	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included
2023W2-N1-ST23	243538	05MALISX	243537	05MALIS	ZB	138/138	205/205	Summer Base Case	Included
2023W2-N1-ST26	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-N1-ST25	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included
2023W2-GD-S116	243538	05MALISX	243537	05MALIS	ZB	138	205	Summer Gen Deliv	Included
2023W2-GD-W21	243538	05MALISX	243537	05MALIS	ZB	138	205	Winter Gen Deliv	Included
2023W2-N1-ST27	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-N1-ST19	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included
2023W2-GD-W25	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Winter Gen Deliv	Included
2023W2-N1-ST18	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205/205	Summer Base Case	Included
2023W2-GD-W162	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Winter Gen Deliv	Included
2023W2-GD-W164	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Winter Gen Deliv	Included
2023W2-N1-ST20	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205/205	Summer Base Case	Included
2023W2-GD-W163	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Winter Gen Deliv	Included
2023W2-GD-W165	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Winter Gen Deliv	Included
2023W2-GD-S121	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Summer Gen Deliv	Included
2023W2-GD-S122	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Summer Gen Deliv	Included
2023W2-GD-S123	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Summer Gen Deliv	Included
2023W2-GD-S4	242926	05MALIS	290237	05MALIS 1EQ	1	765/999	205	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W2-GD-S127	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Summer Gen Deliv	Included
2023W2-GD-S6	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Summer Gen Deliv	Included
2023W2-N2-ST11	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-GD-S126	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Summer Gen Deliv	Included
2023W2-N2-ST10	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-GD-S125	290237	05MALIS 1EQ	243538	05MALISX	1	999/138	205	Summer Gen Deliv	Included
2023W2-GD-S114	243538	05MALISX	243537	05MALIS	ZB	138	205	Summer Gen Deliv	Included
2023W2-N2-ST9	243513	05GENOA	243591	05SPRNDR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST2	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-GD-S115	243538	05MALISX	243537	05MALIS	ZB	138	205	Summer Gen Deliv	Included
2023W2-GD-W21	243538	05MALISX	243537	05MALIS	ZB	138	205	Winter Gen Deliv	Included
2023W2-N2-ST1	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-GD-S3	243538	05MALISX	243537	05MALIS	ZB	138	205	Summer Gen Deliv	Included
2023W2-GD-W21	243538	05MALISX	243537	05MALIS	ZB	138	205	Winter Gen Deliv	Included
2023W2-N2-ST4	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-GD-W59	243538	05MALISX	243537	05MALIS	ZB	138	205	Winter Gen Deliv	Included
2023W2-N2-ST3	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-GD-W21	243538	05MALISX	243537	05MALIS	ZB	138	205	Winter Gen Deliv	Included
2023W2-N2-ST6	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST5	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST8	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST7	243513	05GENOA	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST20	243513	05GENOA	243537	05MALIS	2	138	205	Summer N-1-1	Included
2023W2-N2-ST22	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST21	243526	05HYATT	243537	05MALIS	2	138	205	Summer N-1-1	Included
2023W2-N2-ST13	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST12	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-GD-S135	243537	05MALIS	243553	05POLARS	1	138	205	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2023W2-N2-ST15	243547	05MORSE	243591	05SPRNGR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST14	243553	05POLARS	243590	05WESTAR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST17	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included
2023W2-N2-ST16	243513	05GENOA	243591	05SPRNGR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST19	243547	05MORSE	243591	05SPRNGR	1	138	205	Summer N-1-1	Included
2023W2-N2-ST18	243537	05MALIS	243553	05POLARS	1	138	205	Summer N-1-1	Included

## New Flowgates

CONFIDENTIAL INFORMATION

## Financial Information

Capital spend start date 07/2024

Construction start date 01/2027

Project Duration (In Months) 47

## Cost Containment Commitment

Cost cap (in current year) CONFIDENTIAL INFORMATION

Cost cap (in-service year) CONFIDENTIAL INFORMATION

## Components covered by cost containment

1. Barron Substation - Proposer
2. Barron - Hayden Double Circuit 345kV Transmission Line - Proposer
3. Vassell - Conesville 345kV Transmission Line - Proposer
4. Vassell - Hyatt 345kV Transmission Line - 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	Yes
AFUDC	Yes
Escalation	No
Additional Information	CONFIDENTIAL INFORMATION
Is the proposer offering a binding cap on ROE?	No
Is the proposer offering a Debt to Equity Ratio cap?	CONFIDENTIAL INFORMATION

### **Additional Comments**

None