Green Chapel-Bermuda 345kV Circuit

General Information

Proposing entity name	AEPSCT
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Company proposal ID	AEP_V
PJM Proposal ID	459
Project title	Green Chapel-Bermuda 345kV Circuit
Project description	Install new 1.5-mile 345kV circuit between Green Chapel and Bermuda 345kV Stations and perform sag mitigations on Corridor-Curleys 345kV circuit.
Email	jmperez@aep.com
Project in-service date	05/2030
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	

Project Components

1. Green Chapel-Bermuda 345kV Greenfield Circuit
2. Corridor-Curleys 345kV Circuit (Sag Mitigations)
3. Green Chapel 345kV Station
4. Bermuda 345kV Station

Greenfield Transmission Line Component

Component title	Green Chapel-Bermuda 345kV Greenfield Circuit	
Project description	Construct new 1.5 mile 345kV circuit between Green Chapel and Bermuda 345kV Stations.	
Point A	Green Chapel	
Point B	Bermuda	
Point C		
	Normal ratings	Emergency ratings
Summer (MVA)	3113.000000	3113.000000
Winter (MVA)	3858.000000	3858.000000
Conductor size and type	2-1590 ACSR Falcon	
Nominal voltage	AC	
Nominal voltage	345	
Line construction type	Overhead	
General route description	The route will head North and parallel Beech Road and then turn East and follow Green Chapel Road until it terminates at Green Chapel. The route has already been provided by Siting.	
Terrain description	Rural with some industrial areas. Terrain is flat.	
Right-of-way width by segment	Right of way will be 150' wide for this proposal.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	The greenfield line will not cross any waterways or major civil buildings.	
Environmental impacts	Any spoils generated in industrial areas or near railroad tracks will need sampled and properly characterized for proper disposal. For this project it is preferrable to instead dispose of any soil or concrete that cannot be used as legitimate backfill on site in the same vicinity as it was excavated as assumed PCB regulated waste at the AEP approved Republic/US Ecology Belleville Michigan landfill without any sampling.	

Tower characteristics	Single Circuit Steel H frames will be used for this proposal.
Construction responsibility	AEP
Benefits/Comments	This proposal provides a new 345kV path and avoids adding transformers at Innovation.
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown
ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown
Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	$16,610,334.96
Component cost (in-service year)	$16,610,334.96

Transmission Line Upgrade Component

Component title	Corridor-Curleys 345kV Circuit (Sag Mitigations)
Project description	Perform sag mitigations along 4.5 miles of the Corridor-Curleys 345kV Circuit. Approximately 14 towers will be raised to mitigate clearance violations and bring the line to MOT.
Impacted transmission line	Corridor-Curleys 345kV
Point A	Structure 225 of Corridor-Curleys 345kV
Point B	Structure 245 of Corridor-Curleys 345kV
Point C	

Terrain description	Flat
Existing Line Physical Characteristics	
Operating voltage	345
Conductor size and type	2-1272 ACSR 45/7
Hardware plan description	Hardware will be reused were applicable.
Tower line characteristics	Single Circuit Steel Lattice structures from the early 1970's.
Proposed Line Characteristics	

	Designed	Operating
Voltage (kV)	345.000000	345.000000
	Normal ratings	Emergency ratings
Summer (MVA)	1662.000000	2224.000000
Winter (MVA)	2102.000000	2525.000000

Conductor size and type	2-1272 ACSR 45/7
Shield wire size and type	Shield wire will not be replaced
Rebuild line length	N/A
Rebuild portion description	N/A
Right of way	All work associated with this proposal expected to be done within the existing ROW.
Construction responsibility	AEP
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown

ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown
Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	$2,152,508.40
Component cost (in-service year)	$2,152,508.40

Substation Upgrade Component

Component title	Green Chapel 345kV Station
Project description	Install 1 -345kV circuit breaker at Green Chapel to accommodate proposed Green Chapel-Bermuda 345kV circuit
Substation name	Green Chapel 345kV
Substation zone	205
Substation upgrade scope	Install 1 -345kV circuit breaker at Green Chapel to accommodate proposed Green Chapel-Bermuda 345kV circuit

Transformer Information

None

New equipment description	1-345kV circuit breaker, 5000A, 63kA
Substation assumptions	Assume removed bus support foundations will be removed completely to avoid interference with new breaker. Assume existing shield wire pole will need to be removed as it is located in path of t-line exit. Utilize existing cable trench. Line will exit South going over existing 138kv line exits. Existing control house will be utilized.
Real-estate description	No expansion necessary.

Construction responsibility	AEP
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown
ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown
Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	$2,926,932.44
Component cost (in-service year)	$2,926,932.44

Substation Upgrade Component

Component title	Bermuda 345kV Station
Project description	Install 2-345kV circuit breakers at Bermuda 345kV station to accommodate proposed Green Chapel-Bermuda 345kV circuit.
Substation name	Bermuda 345kV Station
Substation zone	205
Substation upgrade scope	Install 2-345kV circuit breakers at Bermuda 345kV station to accommodate proposed Green Chapel-Bermuda 345kV circuit.

Transformer Information

None

New equipment description	2-345kV Circuit Breakers, 5000A, 63kA
Substation assumptions	Control house will need to be expanded. Cable trench will be reused.
Real-estate description	No fence expansion will be necessary.
Construction responsibility	AEP
Benefits/Comments	
Component Cost Details - In Current Year $	
Engineering & design	Detailed cost breakdown
Permitting / routing / siting	Detailed cost breakdown
ROW / land acquisition	Detailed cost breakdown
Materials & equipment	Detailed cost breakdown
Construction & commissioning	Detailed cost breakdown
Construction management	Detailed cost breakdown
Overheads & miscellaneous costs	Detailed cost breakdown
Contingency	Detailed cost breakdown
Total component cost	$5,595,079.14
Component cost (in-service year)	$5,595,079.14

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
2025W1-N11-ST127	290573	05INNOVATION	288789	05INNOVAT2EQ	2	345/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST138	290254	05INNOVATION	290577	05INNOVAT1EQ	1	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST128	290254	05INNOVATION	288789	05INNOVAT2EQ	2	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST139	290254	05INNOVATION	288789	05INNOVAT2EQ	2	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST135	290573	05INNOVATION	288789	05INNOVAT2EQ	2	345/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST129	290573	05INNOVATION	290577	05INNOVAT1EQ	1	345/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST130	290254	05INNOVATION	290577	05INNOVAT1EQ	1	138/1.0	205	N-1-1 Thermal	Included
2025W1-N11-ST132	290573	05INNOVATION	290577	05INNOVAT1EQ	1	345/1.0	205	N-1-1 Thermal	Included

New Flowgates

None

Financial Information

Capital spend start date	04/2026
Construction start date	05/2028
Project Duration (In Months)	49

Additional Comments

None