

# East Leipsic-New Liberty 138 kV Conversion

## General Information

Proposing entity name	AEPSCT
Company proposal ID	AEP_M
PJM Proposal ID	957
Project title	East Leipsic-New Liberty 138 kV Conversion
Project description	AEP proposes to rebuild and convert the existing 17.6 miles East Leipsic – New Liberty 34.5 kV circuit to 138 kV using 795 ACSR. This will require adding new 3000A, 40 kA, 138 kV circuit breakers at New Liberty and East Leipsic stations and two 138 kV MOABs and two 138/12 kV transformers with 138 kV circuit switchers at McComb station. Proposed Ratings: 245905 to 245757: 257/360/325/404 245757 to 247387: 257/360/325/404 246354 to 247387: 257/360/325/404
Project in-service date	01/2024
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	This project will address the needs reviewed with stakeholders under need number AEP-2020-OH020 in the March 19, 2020 SRRTEP Western meeting.

## Project Components

1. East Leipsic-New Liberty Line Rebuild and Conversion
2. McComb Station Conversion
3. East Leipsic Station Work
4. New Liberty Station Work

## Transmission Line Upgrade Component

Component title	East Leipsic-New Liberty Line Rebuild and Conversion
Impacted transmission line	East Leipsic-New Liberty 34.5 kV Line
Point A	East Leipsic
Point B	New Liberty
Point C	McComb, Shawtown
Terrain description	Flat/rural

### Existing Line Physical Characteristics

Operating voltage	34.5
Conductor size and type	336 ACSR, 2/0 Cu & 4/0 ACSR
Hardware plan description	Existing hardware will not be reused.
Tower line characteristics	1930s vintagewood cross arms and vertical post insulators. Also refer to need number AEP-2020-OH020.

### Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	138.000000	138.000000
	Normal ratings	Emergency ratings
Summer (MVA)	257.000000	360.000000
Winter (MVA)	325.000000	404.000000
Conductor size and type	795 KCM ACSR (26/7) "DRAKE"	
Shield wire size and type	7#8 AW	
Rebuild line length	17 miles	

Rebuild portion description	Rebuild from East Leipsic station to New Liberty station, approximately 17 miles, with 795 ACSR conductor.
Right of way	This project addresses the rebuild of the existing East Leipsic – New Liberty 34.5kV circuit. This planned solution calls for the conversion of the existing 34.5kV transmission line to 138kV capability. Supplemental right-of-way acquisition is required to support the conversion and rebuild solution. Existing easements are in place for the transmission line; however, the existing rights and corridor maintained are not sufficient to support the 34.5kV to 138kV conversion. Additional easement area will need to be acquired in order to supplement the existing easement corridor. These supplemental easements will look to further define a 100' easement width (50' on either side of centerline). The project rebuild will begin at the existing East Leipsic Station, and run in a general southeastern direction to the existing New Liberty Station. Aside from anticipated labor associated with completing all necessary right-of-way acquisition support and non-environmental permitting work, no additional action is anticipated as part of this project at this time. This existing transmission line is located in Putnam County and Hancock County, Ohio. Supplemental right-of-way will acquisition will be necessary for approximately ninety-seven (97) parcels. A table top review showed that there are five (5) publicly-owned parcels impacted as part of this project (Village of McComb and Village of Leipsic). Existing franchise agreements are in place with both the Village of McComb and Village of Leipsic, which will aid in supporting our transmission line rebuild. Land use types within the project footprint are primarily agricultural, along with some residential and commercial properties, as identified through Putnam County and Hancock County online property information listings.
Construction responsibility	AEP
Additional comments	Business confidential information
<b>Component Cost Details - In Current Year \$</b>	
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	\$31,350,851.47
Component cost (in-service year)	\$.00

### Substation Upgrade Component

Component title	McComb Station Conversion
Substation name	McComb Station
Substation zone	205 - AEP
Substation upgrade scope	This scope will require the conversion of existing 34.5kV equipment to 138kV. Station will be expanded to the north and east to allow for new equipment to be installed. Two new 138kV box bays will be installed to allow for line positions and two new 138-12kV XFs to be installed. Distribution Cost not included in proposal but estimated at \$3,995,853.00. This proposal includes transmission scope only.

### Transformer Information

	Name	Capacity (MVA)		
Transformer	McComb Transformer 1	9.75		
		<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	138	12		
		<b>Name</b>	<b>Capacity (MVA)</b>	
Transformer	McComb Transformer 2	9.75		
		<b>High Side</b>	<b>Low Side</b>	<b>Tertiary</b>
Voltage (kV)	138	12		
New equipment description	Qty. 4 – 138kV, 3000A disconnect switches Qty. 2 – 138kV, 3000A circuit switchers Qty. 2 – 138-12kV, 9.75MVA XFs			

Substation assumptions	All outages required will be available.
Real-estate description	Land we are expanding station on is already owned by AEP.
Construction responsibility	AEP
Additional 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	\$867,578.80
Component cost (in-service year)	\$.00

**Substation Upgrade Component**

Component title	East Leipsic Station Work
Substation name	East Leipsic
Substation zone	205 - AEP
Substation upgrade scope	This scope includes expanding the existing station to the north to allow for another 138kV line exit to be installed. New line exit will involve installing a new 138kV CB, disconnect switches and new dead end structure along with extending existing 138kV bus work.

## Transformer Information

None

New equipment description Qty. 1 – 138kV, 3000A, 40kA circuit breaker Qty. 2 – 138kV, 3000A disconnect switch Qty. 3 – 138kV CCVT

Substation assumptions Expansion area will be able to be obtained. Outage required will be available.

Real-estate description Expansion area is owned by customer will need to acquire this land.

Construction responsibility AEP

Additional 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 \$1,300,147.70

Component cost (in-service year) \$.00

## Substation Upgrade Component

Component title New Liberty Station Work

Substation name New Liberty

Substation zone	205 - AEP
Substation upgrade scope	This scope include the addition of one 138kV circuit breaker and disconnect switches in order to add an additional line position at New Liberty station. Line relaying potential devices are being installed as well. Retire 34.5 kV breaker F.

**Transformer Information**

None	
New equipment description	Qty. 1 – 138kV, 3000A, 40kA circuit breaker Qty. 2 – 138kV, 3000A disconnect switches Qty. 3 – 138kV CCVTs
Substation assumptions	Required outages will be available.
Real-estate description	N/A
Construction responsibility	AEP
Additional 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	\$899,268.70
Component cost (in-service year)	\$.00

## Congestion Drivers

None

## Existing Flowgates

FG #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
AEP-T63	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T70	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T71	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T72	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T73	245743	05E OTTAWA	245805	05LEIPSIC	1	69	205	FERC 715 Thermal
AEP-T66	245792	05E.LEIPSC	245810	05NLEIP SW	1	69	205	FERC 715 Thermal
AEP-T67	242993	05E.LEIPSIC2	245792	05E.LEIPSC	1	138/69	205	FERC 715 Thermal
AEP-T64	245805	05LEIPSIC	245806	05DSCHLERT	1	69	205	FERC 715 Thermal
AEP-T65	245806	05DSCHLERT	245810	05NLEIP SW	1	69	205	FERC 715 Thermal
AEP-T68	245757	05MCCOMB OP	245770	05NEW LIBR	1	35	205	FERC 715 Thermal
AEP-T69	245730	05CAIRO	245740	05E LIMA	1	69	205	FERC 715 Thermal

## New Flowgates

None

## Financial Information

Capital spend start date 12/2020

Construction start date 07/2022

Project Duration (In Months) 37

## Additional comments



None