

PJM RTEP – 2016/17 RTEP Long Term Proposal Window

Baldwin Road-Raphael Road 230 kV

A Proposal to PJM Interconnection February 28, 2017

Submitted on behalf of

Transource® Energy, LLC and its Affiliates

1 Riverside Plaza, Columbus, Ohio 43215-2372





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A. Executive Summary

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A.1. General Description of Proposed Project

Transource proposes to build the “Baldwin Road – Raphael Road 230 kV Project” (or, “the Project”) in Pennsylvania and Maryland. PJM should evaluate the Project as one proposal. The Project will establish one new switching station called “Baldwin Road” which will tap the Peach Bottom – Rock Springs 500 kV line and include two 500/230 kV 1200/1500 MVA transformers. A new double-circuit greenfield 230 kV line will be constructed between Baldwin Road and the existing Raphael Road stations, approximately 31.2 miles in length, operated as a six-wired single circuit. Raphael Road station will be expanded to include one new 230 kV breaker to terminate the new line. Upgrades will be required on the Raphael Road - Northeast 230 kV lines, the Northeast – Riverside 230 kV lines, the Five Forks – Windy Edge 115 kV lines, and the Face Rock 115/69 kV transformers. Northeast 115 kV station will be expanded to cut in the Crane – Windy Edge 115 kV lines. Remote end relaying upgrades or changes will be required at the following existing stations: Rock Springs 500, Peach Bottom 500, Raphael Road 230, Northeast 230, Northeast 115, Riverside 230, Windy Edge 115, Five Forks 115, and Crane 115 kV stations. [REDACTED]

Transource has completed the necessary preliminary project development work to determine project constructability, preliminary cost estimates, and a construction schedule. Experienced AEP engineering, siting, permitting, project management, and construction personnel were the primary resources for this work.

A.2. Market Efficiency Flowgates Addressed

The Project will address congestion identified by PJM on the Conastone-Graceton and Graceton-Bagley 230 kV lines. Further analysis and results are discussed in Section D.

Furthermore, Transource performed analysis of existing and new contingencies that the Project may create and found no planning criteria violations.

A.3. Overall Schedule Duration

The Project is expected to be placed in service 83 months after execution of the PJM Designated Entity Agreement (DEA). Assuming the DEA is executed by February 1, 2018, Transource could place the Project in service December 2024.

A.4. Overview of Estimate

The estimated capital cost of the Project is approximately \$344,630,234 (in 2017 dollars). This estimated cost includes all Project components, including work that PJM may consider as upgrades. Please refer to Section E of this proposal for details on the project cost.

A.5. Designated Entity Statement of Intent

Transource Maryland, LLC (Transource Maryland) and Transource Pennsylvania, LLC (Transource Pennsylvania) seek to be considered the Designated Entities for the project described within this Proposal to design, construct, own, operate, and maintain the facilities and assets, subject to determination regarding components deemed upgrades by PJM. Specifically, Transource Maryland seeks to be the Designated Entity for the portion of the project that is physically located in the state of Maryland and Transource Pennsylvania seeks to be the Designated Entity for the portion of the project that is physically located in the state of Pennsylvania.

B. Company Evaluation Information

Transource Maryland and Transource Pennsylvania are direct, wholly-owned subsidiaries of Transource Energy, LLC. Transource, Transource Maryland, and Transource Pennsylvania are located at 1 Riverside Plaza in Columbus, Ohio. Specific contact information is provided below.

B.1. Transource Contacts

Primary Contact	Adam Hickman Manager, Transource Business Development	Transource Energy, LLC 1 Riverside Plaza Columbus, Ohio 43215-2372 Telephone: 614-716-2854 Email Address: ajhickman@aep.com
Secondary Contact	Takis Laios Manager, Transmission Asset Strategy	Transource Energy, LLC 1 Riverside Plaza Columbus, Ohio 43215-2372 Telephone: 614-716-3462 Email Address: tlaios@aep.com

B.2. Transource Qualifications

Transource, Transource Maryland, and Transource Pennsylvania have been pre-qualified to be Designated Entities for transmission projects in PJM under section 1.5.8 (a) of the PJM Operating Agreement. The pre-qualification information is contained in the document submitted to PJM on April 29, 2013, entitled *Pre-Qualification Application of American Electric Power and Certain Affiliates*. This document is on record with PJM and posted on the PJM website, with PJM pre-qualification ID of 13-05. PJM confirmed the pre-qualified status of AEP and certain affiliates, including Transource, in a letter dated July 7, 2013. As required annually, Transource has reviewed this information and an Addendum to this posted document was submitted to PJM on September 30, 2016. PJM affirmed the pre-qualified status of AEP and certain affiliates, including Transource and Transource Maryland, LLC and Transource Pennsylvania, LLC, in a letter dated October 27, 2016.



Transource Maryland and Transource Pennsylvania will bring to bear the talents, resources, and capabilities of AEP, GPE, and their respective subsidiaries to execute the Project. These capabilities are detailed in AEP and Transource's prequalification submittal to PJM. Additionally, for the benefit of PJM, additional information detailing the strength of financial ties between Transource Maryland and Transource Pennsylvania and Transource, and Transource's direct parent companies, AEP Transmission Holding Company, LLC and GPE Transmission Holding Company, LLC, is provided below.

Overview of Capital Resources

Transource Maryland and Transource Pennsylvania are anticipated to be the respective owners of the portions of the awarded project. Transource Maryland and Transource Pennsylvania will follow the successful model of financing that is currently used by its affiliate sister companies. Transource Maryland and Transource Pennsylvania intends to use a combination of debt and equity financing to fund its ownership of the projects. Figure 1 below depicts the legal structure and financing arrangement for Transource Energy and its existing active subsidiary companies, including Transource Missouri, LLC, which currently owns and operates transmission assets in SPP, and Transource West Virginia, LLC which is developing transmission projects in the PJM Interconnection.

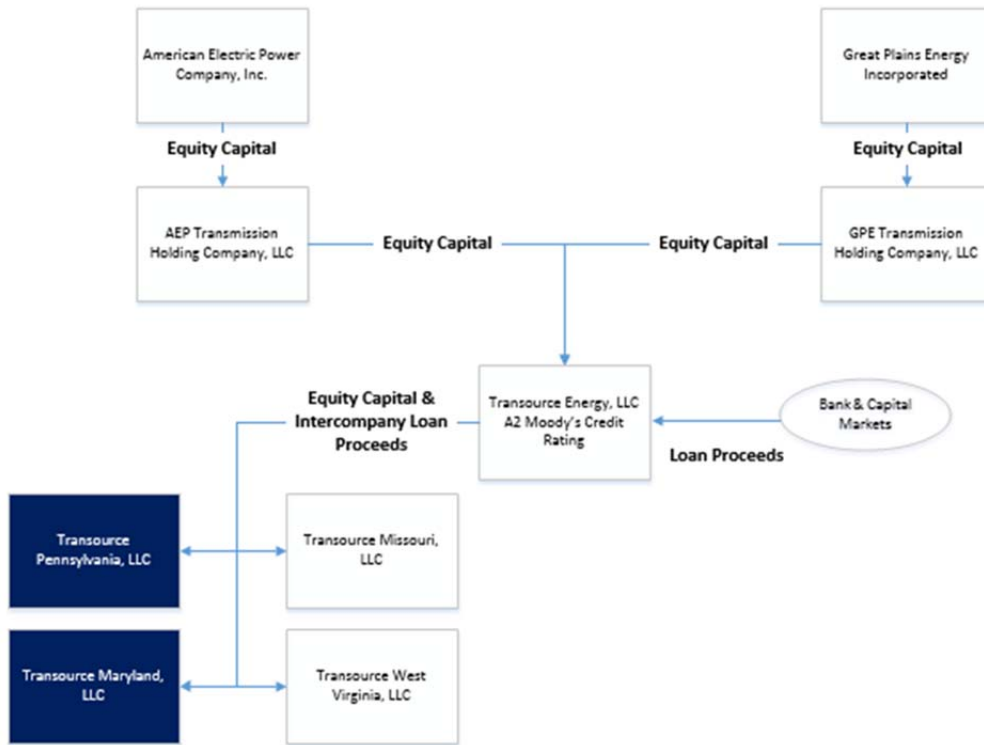


Figure 1. Transource & Transource Maryland and Transource Pennsylvania Financial Structure

Transource’s funding authority is governed by an Operating Agreement, whereby the Members of the Operating Agreement, AEP Transmission Holding Company, LLC and GPE Transmission Holding Company, LLC, have set forth an agreement with respect to obligations to fund capital contributions for ongoing expenditures at Transource Energy and its subsidiary companies.

B.3. Overview of Transource, Transource Maryland, and Transource Pennsylvania

Transource and its subsidiary companies were formed to pursue the development of competitive transmission projects in marketplaces initiated by the implementation of FERC Order No. 1000. AEP owns 86.5 percent of Transource, and GPE owns 13.5 percent. Transource owns 100% of its subsidiary companies, including Transource Maryland and Transource Pennsylvania. The combined strengths of AEP and GPE in engineering, project management,

procurement, project development, construction, operation and maintenance will result in effective and efficient delivery of transmission solutions that benefit transmission customers.

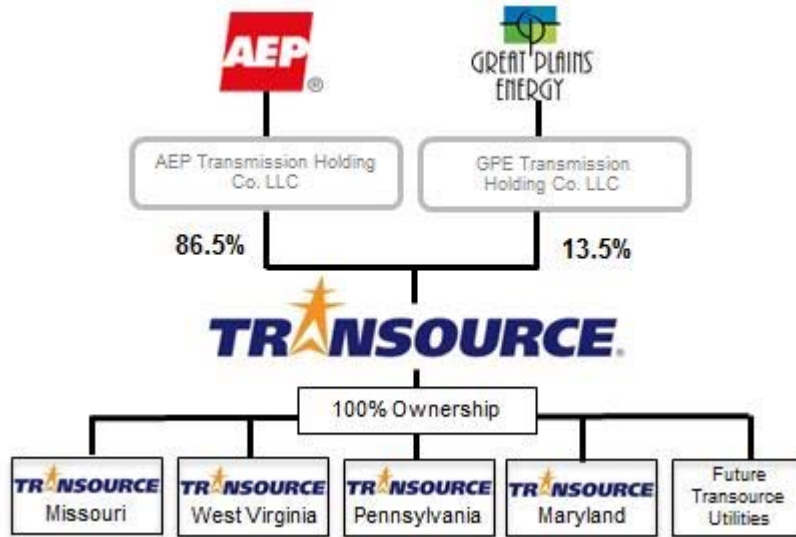


Figure 2. Summary of Transource Ownership Structure

Transource developed two Southwest Power Pool (SPP) approved transmission projects in the state of Missouri through its subsidiary Transource Missouri, LLC (Transource Missouri): The Iatan-Nashua 345 kV transmission project, placed into service in April 2015, and the Sibley-Nebraska City 345 kV transmission project, placed into service in December 2016.

Transource, in coordination with AEP affiliate Appalachian Power Company, is also developing a project in West Virginia through its subsidiary company, Transource West Virginia, LLC. The \$75 million project consists of building 25 miles of 138 kV transmission line and three substations, and upgrades to other transmission facilities in Roane and Kanawha counties of West Virginia. The project is expected to be in-service in 2019.

In addition to these projects in Missouri and West Virginia, Transource was awarded PJM’s largest-ever market efficiency project on the Pennsylvania-Maryland border in August 2016. Transource Pennsylvania and Transource Maryland are developing the respective portions of the project according to state boundaries. In January 2017, Transource Pennsylvania

and Transource Maryland, through authorization from the Federal Energy Regulatory Commission (FERC), established formula rates and received approval for certain incentives.

The figure below provides a snapshot of the states in which Transource's owners, AEP and GPE, currently own or are developing transmission assets, demonstrating the breadth and capabilities of Transource.

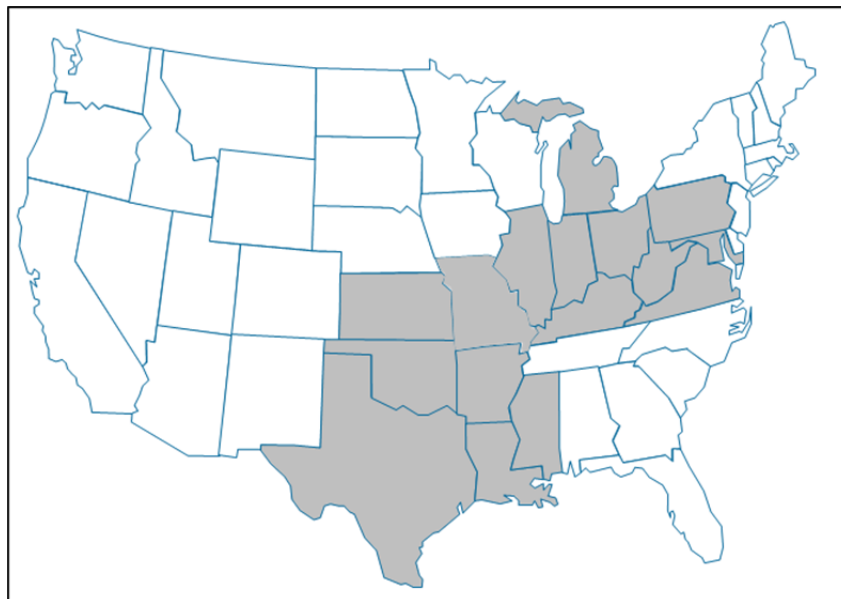


Figure 3. AEP and GPE Combined Transmission Presence

C. Proposed Project Constructability Information

[REDACTED]

D. Analytical Assessment

[REDACTED]

E. Cost

[REDACTED]

F. Schedule

[REDACTED]

G. Operations/Maintenance

For all Project components, Transource will maintain a reliable system and ensure safety and compliance with all applicable codes and standards. Transource will oversee the planning, maintenance, real-time operations and emergency response activities for the project.

G.1. Operational Plan

Transource is flexible regarding Project operations that can be provided using one of the following approaches:

- Transource can operate the new facilities directly using the capabilities of the AEP Transmission Operations (TOps) organization.
- Transource can work with the incumbent transmission owner to facilitate their operations of the new facilities.

The TOps organization operates from a state-of-the-art System Control Center (SCC) located in New Albany, Ohio. AEP TOps also operates five Transmission Operations Centers that coordinate transmission switch orders and interface with field personnel. The SCC and Transmission Operations Centers are staffed with NERC and PJM-Certified operators.

Operator tools include a State Estimator covering AEP's 11-state transmission system, real-time contingency analysis, and visualization and situational awareness tools. TOps has a back-up control center that can be staffed and fully functional within one hour from declaration of an emergency. TOps completes approximately 18,000 switching jobs totaling over 200,000 switching steps with an accuracy rate exceeding 99.99 percent annually.

G.2. Maintenance Plan

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Appendix

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