

Transmission Expansion Advisory Committee Market Efficiency Update

May 12, 2016

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Market Efficiency 2014/15 Long Term Proposal Window Update

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AP-South Combination Projects



AP-South Combination Project Results: Updated Cost

	9A (Without Capacitors)		Combo 18H(Modified)+(9A-3 East)	Combo 19B+(9A-3	3 East)	Transource PA Combo 19D+(9A-3 क्रिक्सेendix 4			
Project Cost	\$281.60		\$220.50	\$192.16		\$252.99			
Reliability Upgrades Description	Ringgold Substation: Expand station to 230kV double breaker/double bus and replace 230/138 kV transformers.		Reliability analysis not performed	Grand Point Substation: Expand station to	\$5.28	Ringgold Substation: Expand station to 230kV double breaker/double bus and replace 230/138 kV transformers.	\$14.13		
	Ringgold-Catoctin: Upgrade terminal equipment, rebuild/reconductor	\$44.89		breaker and half.		Ringgold-Catoctin: Upgrade terminal equipment, rebuild/reconductor	\$44.89		
Total Reliability Upgrades Cost	\$59.03			\$5.28		\$59.03			
Total Cost (w Upgrd)	\$340.63		\$220.50	\$197.44		\$312.02			
ISD	2020		2020	2020		2020			
Delta in AEP-DOM L/O BED-BLA	(\$4)		(\$5)	(\$4)		(\$7)			
Delta in AP SOUTH L/O BED-BLA	(\$49)		(\$19)	(\$26)		(\$31)			
Delta in Total Interfaces Cong	(\$54)		(\$24)	(\$31)		(\$38)			
Delta in Total PJM Cong	(\$83)		(\$41)	(\$44)		(\$61)			
B/C Ratio	2.48		2.46	2.39		1.97			
Delta in Gross Load Payment	(\$30)		(\$9)	(\$33)		(\$13)			
Delta in Production Cost	(\$31)		(\$16)	(\$17)		(\$25)			
Comments	Minor congestion increase on Graceton – Bagley (BGE)	Minor congest increase on Graceton – Bagley	ion (BGE)	Minor congestion increase on Graceton – Bagley (BGE)					

*Deltas represent totals of 2019 and 2022 study years



Summary of Results Transource PA Appendix 4

Project 9A (Without Capacitors) provides the most benefits

- Highest B/C ratio
- Most AP-South congestion savings
- Most total PJM congestion savings
- Most production cost savings

Benefits



Final AP-South Market Efficiency Project Recommendation

Transource PA Appendix 4

Project 9A (Without Capacitors)

- Tap the Conemaugh Hunterstown 500 kV line and build new 230 kV double circuit line between Rice and Ringgold.
- Build new 230 kV double circuit line between Furnace Run and Conastone.
- Rebuild of the Conastone Northwest 230 kV line.
- Replace the Ringgold #3 and #4 transformers with 230/138 kV autotransformers
- Ringgold bus reconfiguration
- Reconductor of Ringgold-Catoctin 138 kV.
- Cost (\$M): \$340.6
- IS Date: 2020
- Recommendation to next PJM Board.



Recommended Project Designated Entities

Transource PA Appendix 4

Component Description	Designated Entity					
Project 9A (Without Capacitors)						
Tap the Conemaugh - Hunterstown 500 kV line & create new Rice 500 kV & 230 kV stations. Install two 500/230 kV transformers.	Transource Energy, LLC					
Build new 230 kV double circuit line between Rice and Ringgold.	Transource Energy, LLC					
Tap the Peach Bottom – TMI 500 kV line & create new Furnace Run 500 kV & 230 kV stations. Install two 500/230 kV transformers.	Transource Energy, LLC					
Build new 230 kV double circuit line between Furnace Run and Conastone.	Transource Energy, LLC					
Rebuild the Conastone - Northwest 230 kV line.	Baltimore Gas & Electric					
Additional Reliability Upgrades						
Replace the Ringgold #3 and #4 230/138 kV transformers.	Allegheny Power					
Ringgold bus reconfiguration.	Allegheny Power					
Rebuild/reconductor the Ringgold-Catoctin 138 kV & replace terminal equipment at both ends of the circuit.	Allegheny Power					

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Posted Constructability Whitepaper

- The draft 2014/15 Long-term proposal window constructability white paper has been posted
- The white paper summarizes the independent cost review for several projects with costs exceeding \$50 million



http://www.pjm.com/~/media/committeesgroups/committees/teac/20160512/20160512-2014-2015long-term-proposal-window-independent-cost-review-whitepaper.ashx

Trend for Net Load Benefits of Recommended Project 9A (Without Capacitors)

Market Efficiency Project 9A (Without Capacitors) Trend of Net Load Benefits

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Market Efficiency 2016/17 Long Term Proposal Window Update

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Market Efficiency Timeline

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2016-2017 24-Month Market Efficiency Cycle Timeline

Long Term proposal window:

November 2016 - February 2017

- Analysis of proposed solutions:
- Determination of Final projects:

March 2017 - November 2017

December 2017

Next Steps Transource PA Appendix 4

Finalize Market Efficiency Inputs Board Review of Market Efficiency Input Assumptions Market Efficiency Preliminary Results: Post Market Efficiency Base Scenarios: Stakeholder feedback on model: PJM review for acceleration candidates: Proposal window opens:

June June July July August-September August-October November



Questions?

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