



Market Efficiency Update

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Transmission Expansion Advisory Committee
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2024/25 Market Efficiency Update

- PROMOD Database posted on [ME secure page](#) (2029 and 2032 modeled years).
 - Updated topology to be consistent with the 2029 and 2032 Summer Peak powerflows posted for the reliability Window 1 2024.
- 2024 ME Input Assumptions workbook posted on [ME public page](#).
- Generation Expansion based on queue status as of May 14, 2024.
 - Includes NJ SAA 1.0 (See tab **NJ SAA 1.0** in **2024 ME Input Assumptions** workbook).
 - Includes additional capacity, FSA level, needed in 2032 to meet the assumed 17.8% Installed Reserve Margin (See tab **FSA Level Added Through 2032** in **2024 ME Input Assumptions** workbook).

2024/25 Market Efficiency Simulated Congestion 2029 PJM Facilities > \$1M



2024/25 ME Base Case Simulated Congestion

Constraint	Area	Type	Simulated 2029 Annual Congestion (\$M)	Simulated 2029 Hours Binding	Comment
Clifford-Boxwood 138 kV	AEP	Line	28.78	1032	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
Scottsville-Bremo 138 kV	AEP-DOM	Line	7.82	594	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
Maliszewski 765/138 kV XFMR	AEP	XFMR	6.68	41	
Olive-Green Acre 345 kV	AEP-NIPS	Line	6.40	77	
Museville-Smith Mountain 138 kV	AEP	Line	5.03	165	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
Haviland-East Lima 138 kV	AEP	Line	2.88	130	
Axton-Danville 138 kV	AEP	Line	1.27	70	
Roberts-Kenny 138 kV	AEP	Line	1.12	22	Posted as violation in 2024 RTEP Window 1, Substation Equipment Exclusion
Westvaco-Mt Zion 138 kV	APS	Line	34.21	1307	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
Frostburg-Ridgeley 138 kV	APS	Line	2.00	93	



2024/25 ME Base Case Simulated Congestion (cont.)

Constraint	Area	Type	Simulated 2029 Annual Congestion (\$M)	Simulated 2029 Hours Binding	Comment
AD1-100 Tap-Wilton 345 kV	COMED	Line	419.91	1910	Posted as violation in 2024 RTEP Window 1, Substation Equipment Exclusion
Wolfs Crossing 345/138 kV XFMR	COMED	XFMR	66.98	577	
University Park-Green Acre 345 kV	COMED-NIPS	Line	51.79	285	
Kewanee-Putnam 138 kV	COMED-AMIL	Line	12.42	294	
Cherry Valley-Silver Lake 345 kV	COMED	Line	11.13	135	
Kewanee 138 kV Disconnect B1Z1	COMED	DISC	8.58	752	Posted as violation in 2024 RTEP Window 1, Substation Equipment Exclusion
Cherry Valley 138 kV CB	COMED	CB	6.11	30	
Kewanee 138 kV Disconnect B1Z5	COMED	DISC	4.63	460	
Crescent Ridge-Corbin 138 kV	COMED-AMIL	Line	3.71	166	
Quad Cities-Cordova 345 kV	COMED-MEC	Line	1.15	5	



2024/25 ME Base Case Simulated Congestion (cont.)

Constraint	Area	Type	Simulated 2029 Annual Congestion (\$M)	Simulated 2029 Hours Binding	Comment
Fentress-Thrasher 230 kV	DOM	Line	137.77	1260	
Chesterfield 230/115 kV XFMR	DOM	XFMR	8.70	391	
Chesterfield-Chickahominy 230 kV	DOM	Line	7.16	250	
Spotsylvania-Morrisville 500 kV	DOM	Line	3.60	29	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
Dahlgren-Oak Grove 230 kV	DOM	Line	2.68	62	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
St. Johns-Four Rivers 230 kV	DOM	Line	2.25	88	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
Turkey Run-Walnut Creek 230 kV	DOM	Line	2.23	212	
Leroy Center-Spruce 138 kV	FE-ATSI	Line	1.34	133	
South Reading-Boonetown 230 kV	METED	Line	4.92	473	
Hunterstown 500/230 kV XFMR	METED	XFMR	1.63	98	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals



2024/25 ME Base Case Simulated Congestion (cont.)

Constraint	Area	Type	Simulated 2029 Annual Congestion (\$M)	Simulated 2029 Hours Binding	Comment
Dauphin-Juniata 230 kV	PPL	Line	8.97	88	Posted as violation in 2024 RTEP Window 1, PJM accepting proposals
Siegfried #4 230/138 kV XFMR	PPL	XFMR	4.06	18	
Hosensack-Elroy 500 kV	PPL	Line	2.91	15	Posted as violation in 2024 RTEP Window 1, Substation Equipment Exclusion
Kittatinny-Bushkill 230 kV	JCPL-PPL	Line	2.94	25	
AP South Interface	PJM	INT	8.25	120	Voltage violations near interface in 2024 RTEP Window 1, PJM accepting proposals
Blackoak-Bedington Interface	PJM	INT	2.07	25	Voltage violations near interface in 2024 RTEP Window 1, PJM accepting proposals

- Post the updated 2024/2025 ME Base Case database:
 - Updated case to be posted on the [ME secure page](#) in the following days.
 - 2029 and 2032 congestion report to be posted with August TEAC materials.
- PJM requested stakeholders to provide feedback on the ME Base Case by August 31, 2024.
- Next Steps – add modeled years 2035 and beyond:
 - Update interregional data.
 - Update generation expansion to observe 17.8% IRM (beyond year 2032).
 - Update powerflows for consistency with reliability Window 1 2024.

Congestion Impact of RTEP Upgrades

(Comparison of ASIS and RTEP Topology)



Congestion Savings of RTEP Upgrades

Constraint*	Area	Type	Simulated 2025 Annual Congestion Savings (\$M)	RTEP Upgrade
Lincoln-Straban 115 kV	METED	Line	153.10	B3800: Build new Hunterstown-Carroll 230 kV circuit
Juniata #2 500/230 kV XFMR	PPL	XFMR	22.77	B3664: Replace station equipment at Juniata 230 kV
Haumesser Road-W De Kalb 138 kV	COMED-NIPS	Line	19.11	B3811: Rebuild Haumesser Road to H-452 138 kV
Nottingham Reactor 230 kV	PECO	Line	18.26	B3800: Eastern Cluster
Powerton-Towerline 138 kV	COMED-AMIL	Line	16.87	B3760: Replace wave trap at Powerton 138 kV
Dumont-Stillwell 345 kV	AEP-NIPS	Line	15.97	B3775: Dumont-Stillwell 345 kV sag study
Northwest-Conastone 230 kV	BGE	Line	13.72	B3771: Reconductor Northwest-Conastone 230 kV circuits
Carson-Chaparral Tap 230 kV	DOM	Line	11.31	B3694: Rebuild Carson-Locks 230 kV
St John-Crete 345 kV	NIPSCO-COMED	Line	10.68	B3775: Reconductor/Rebuild Crete-St John 345 kV
Roxbury-Shade Gap 115 kV	PENELEC	Line	8.63	B3751, B3752: Rebuild Roxbury-Shade Gap 115 kV
Olive-University Park 345 kV	AEP-COMED	Line	7.72	B3775: Olive-University Park 345 kV sag study
Face Rock #2 115/69 kV XFMR	PPL	XFMR	7.42	B3800: Eastern Cluster
Maliszewski 765/138 kV XFMR	AEP	XFMR	6.35	B3852: Install second 765/345 kV bank at Vassell
Charlottesville-Proffit 230 kV	DOM	Line	5.10	B3800: Rebuild 230 kV line #2054
Plymouth Meeting-Whitpain 230 kV	PECO	Line	3.35	B3697: Replace station equipment at Whitpain and Plymouth

*Includes top 10 constraints with largest annual congestion reduction when comparing the ASIS and RTEP topology.

RTEP enhancements that are approved but not yet in service account for more than a **\$282 million** reduction in congestion when comparing the 2025 simulations with the 2024 ASIS and 2029 RTEP topologies.

- Completed
 - Production cost simulations:
 - Near-Term and Future study years with AS-IS Topology.
 - Near-Term and Future study years with RTEP Topology.
 - Identified reliability upgrades responsible for congestion reductions between the AS-IS and RTEP topology cases.
- Next Steps
 - Check the feasibility of accelerating schedules for the identified reliability upgrades.
 - Results to be presented at future TEAC meetings.

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Market Efficiency Update



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- V1 – 7/31/2024 – Original slides posted

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