Market Simulation Update

Market Simulation

Transmission Expansion Advisory Committee

September 8, 2026

2026/27 Market Efficiency Cycle

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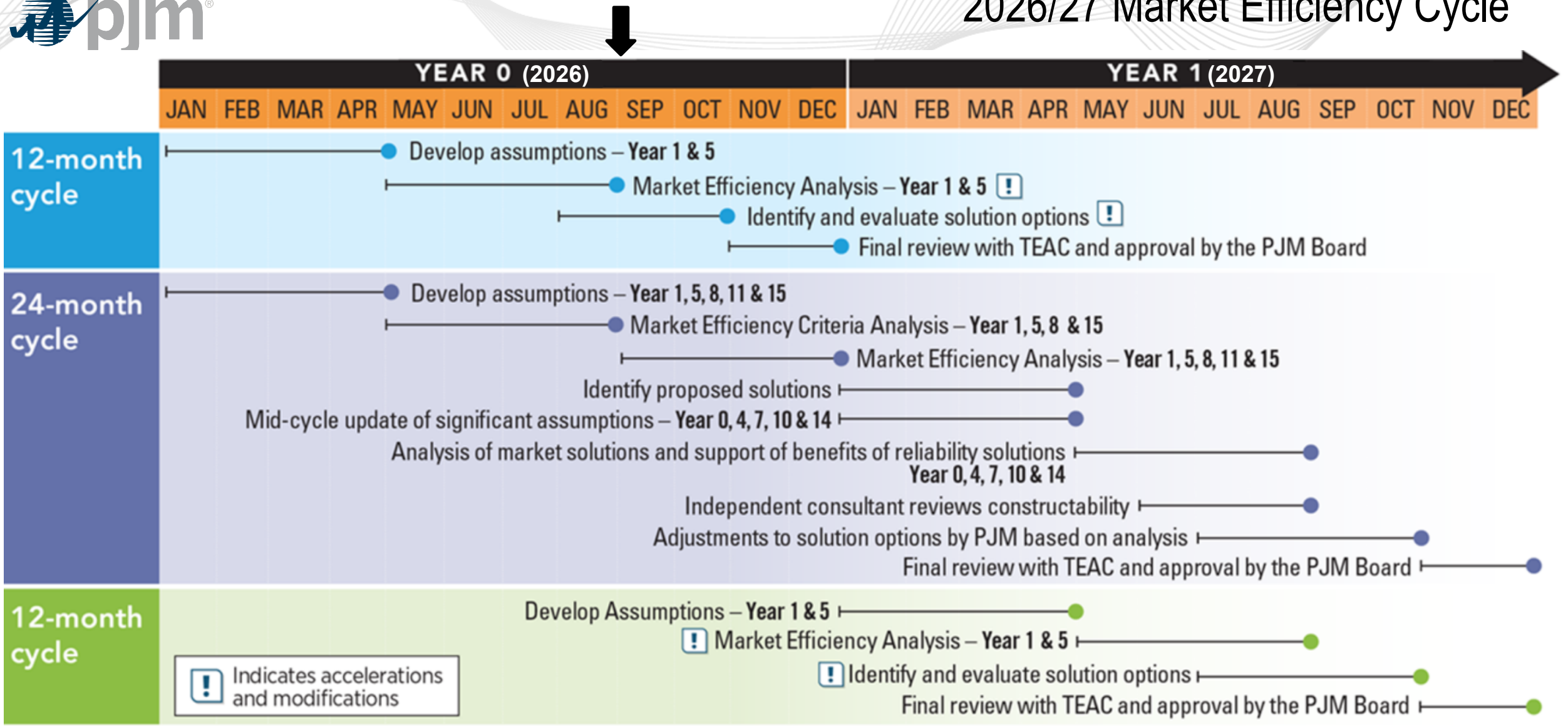

2026/27 Market Efficiency Preliminary Timeline

Step	Target Date
Post Preliminary 2031 Base Case	July 2026
Post Updated Preliminary 2031 Base Case	September 2026
Stakeholders Feedback	August – October 2026
Identify Congestion Drivers	November – December 2026
Post Final Base Case and Target Congestion Drivers	January – February 2027
Long Term Proposal Window	February – May 2027
Analysis of Proposed Solutions	May – September 2027
TEAC Reviews and Board Approval	October – December 2027

2026/27 ME Base Case Status and Next Steps

- PJM posted an updated preliminary 2026/2027 ME Base Case database (2031 modeled year) on September 2, 2026.
  - Updated 2031 ME base case and corresponding congestion report were posted on the ME secure page.
  - Updated powerflow to maintain consistency with the latest 2026W1 cases.
  - Updated load forecast and generation expansion to reflect the ComEd updates included in 2026W1.
  - Completed PV Analysis and determined reactive interface limits consistent with the 2031 topology.

- Solicit feedback from stakeholders by September 2026.

- Next Steps:
  - Update generation expansion to observe PJM reserve requirement.
  - Update interregional data as needed.
  - Add other modeled years (2027, 2034, 2037).

2031 Preliminary Simulated Congestion Summary

- In the 2031 preliminary simulation, 62 constraints have congestion greater than $1M and binding hours greater than 25.
  - 14 constraints overlap with 2026W1 reliability violations.
- The constraints will be studied in 2034 to understand the impact of planned upgrades with required in-service dates beyond 2031.

Region	Constraints	Constraints that overlap with 2026W1 reliability violations
COMED	17	7
PJM West (non-Comed)	12	0
MAAC	8	2
Reactive Interfaces	2	0
DOM	13	4
Tie Lines and External	10	1
Total	62	14

2031 Preliminary Simulated Congestion – COMED

Constraint*	Area	Simulated 2031 Annual Congestion ($M)	M2M Coordinated	2026W1 Identified Reliability Violation	2024-2026 Historical Congestion
Cherry Valley (B)-Prairie 345 kV	COMED	>$50M	Y	Y	Y
Prairie-Silver Lake (R) 345 kV	COMED	>$50M	Y	Y	Y
Wayne-Tollway 345 kV	COMED	$10M - $50M			
Miller Rd-W Plano (R) 138 kV	COMED	$10M - $50M		Y	
W Plano (R)-Plano R 138 kV	COMED	$10M - $50M		Y	
Kensington Ave (B)-Kankakee (B) 138 kV	COMED	$1M - $10M			
Alpine Tap (R)-Belvidere (R) 138 kV	COMED	$1M - $10M			Y
Nelson (B)-Herman Rd 345 kV	COMED	$1M - $10M	Y		
Lee County-Byron (B) 345 kV	COMED	$1M - $10M			
Dresden (B)-Kendall 345 kV	COMED	$1M - $10M			
Sandwich (R)-Sandwich (B) 138 kV	COMED	$1M - $10M		Y	
Renner Rd-Lee County 345 kV	COMED	$1M - $10M	Y		
Kewanee-Kewanee (CB) 138 kV	COMED	$1M - $10M			Y
Cordova Energy Center-Nelson (B) 345 kV	COMED	$1M - $10M	Y		
Silver Lake (R)-Grays Lake 345 kV	COMED	$1M - $10M			
Electric Junction (B)-Lombard (B) 345 kV	COMED	$1M - $10M		Y	Y
Electric Junction (R)-Lombard (R) 345 kV	COMED	$1M - $10M		Y	

*Includes prospective PJM and M2M constraints with annual simulated congestion greater than $1M and binding hours greater than 25.

2031 Preliminary Simulated Congestion – PJM West (non-COMED)

Constraint*	Area	Simulated 2031 Annual Congestion ($M)	M2M Coordinated	2026W1 Identified Reliability Violation	2024-2026 Historical Congestion
Axton-AE2-140 Tap 138 kV	AEP	$10M - $50M			
Keywood Switching Station-Abingdon 138 kV	AEP	$10M - $50M			
Museville-Smith Mountain 138 kV	AEP	$10M - $50M			Y
Oraora-Olive 345 kV	AEP	$10M - $50M			
Claytor-South Christiansburg 138 kV	AEP	$1M - $10M			
East Danville-Danville 138 kV	AEP	$1M - $10M			
Cook-Olive 345 kV	AEP	$1M - $10M	Y		Y
Fieldale-Oaklevel 138 kV	AEP	$1M - $10M			
Richland-Lockwood Rd 138 kV	FE-ATSI-AEP	$1M - $10M			Y
AH1-680 Tap-South Canton 345 kV	FE-ATSI-AEP	$1M - $10M			
Patriot Metals-Bluebell 138 kV	FE-ATSI	$1M - $10M			Y
Leroy Center Q4-Spruce Q-4 138 kV	FE-ATSI	$1M - $10M			

*Includes prospective PJM and M2M constraints with annual simulated congestion greater than $1M and binding hours greater than 25.

2031 Preliminary Simulated Congestion – MAAC & Reactive Interfaces

Constraint*	Area	Simulated 2031 Annual Congestion ($M)	M2M Coordinated	2026W1 Identified Reliability Violation	2024-2026 Historical Congestion
Peach Bottom #1 TR 500/230 kV	PECO	>$50M			Y
Brunner Island Reactor-W Hempfield 230 kV	PLGRP	$10M - $50M			Y
Safe Harbor-Manor 69 kV	PLGRP	$1M - $10M			
Bennett-Milford 230 kV	DPL	$1M - $10M			Y
East Towanda-Canyon 230 kV	PENELEC	$1M - $10M		Y	Y
North Meshoppen #4 TR 230/115 kV	PENELEC	$1M - $10M		Y	Y
Philipsburg-Shawville 115 kV	PENELEC	$1M - $10M			Y
Dickerson H-Dickerson #2 230 kV	PEPCO	$1M - $10M			Y
AP South Interface	PJM	>$50M			Y
Cloverdale-Joshua Falls Interface	PJM	>$50M			

*Includes prospective PJM and M2M constraints with annual simulated congestion greater than $1M and binding hours greater than 25.

2031 Preliminary Simulated Congestion – DOM

Constraint*	Area	Simulated 2031 Annual Congestion ($M)	M2M Coordinated	2026W1 Identified Reliability Violation	2024-2026 Historical Congestion
Hendrick-Person 230 kV	DOM-CPLE	>$50M			
Waller Solar I-Lancaster 115 kV	DOM	$10M - $50M		Y	
Bremo #2 TR 230/115 kV	DOM	$10M - $50M			
Farmville #2 TR 230/115 kV	DOM	$10M - $50M			
Willis Mt-Farmville 115 kV	DOM	$1M - $10M		Y	
Altavista-Otter 138 kV	DOM-AEP	$10M - $50M			
AB2-161 Tap-Backers Pond Del Pt 115 kV	DOM	$1M - $10M		Y	
Gladys Tap-Altavista 69 kV	DOM	$1M - $10M		Y	
Altavista #1 TR 138/115 kV	DOM	$1M - $10M			Y
Farmville-AH1-439 Tap 230 kV	DOM	$1M - $10M			
Fork Union #1 TR 230/115 kV	DOM	$1M - $10M			
Pumphouse-Poe 115 kV	DOM	$1M - $10M			
Clubhouse #1 TR 230/115 kV	DOM	$1M - $10M			

*Includes prospective PJM and M2M constraints with annual simulated congestion greater than $1M and binding hours greater than 25.

2031 Preliminary Simulated Congestion – Tie Lines & External M2M

Constraint*	Area	Simulated 2031 Annual Congestion ($M)	M2M Coordinated	2026W1 Identified Reliability Violation	2024-2026 Historical Congestion
Crescent Ridge (R)-Corbin 138 kV	COMED-MISO	$10M - $50M	Y	Y	Y
Kewanee-Putnam 138 kV	COMED-MISO	$1M - $10M	Y		Y
Powerton (R)-Tazewell 345 kV	COMED-MISO	$1M - $10M	Y		Y
Reynolds #3 TR 765/345 kV	MISO	$10M - $50M	Y		
He Hubbell-Batesville 138 kV	MISO	$10M - $50M	Y		Y
Tazewell #1 TR 345/138 kV	MISO	$10M - $50M	Y		
Gray Summit-Labadie 345 kV	MISO	$1M - $10M	Y		Y
Green Acre-P9700 East 345 kV	MISO	$1M - $10M			
Dune Acre-Michigan City #43 138 kV	MISO	$1M - $10M	Y		Y
P9700 East-Olive 345 kV	MISO-AEP	$1M - $10M	Y		

*Includes prospective PJM and M2M constraints with annual simulated congestion greater than $1M and binding hours greater than 25.

2026 Acceleration Analysis of RTEP Reliability Projects

Acceleration Analysis of Reliability Upgrades

- Scope
  - Determine which Reliability upgrades, if any, have an economic benefit if accelerated or modified.
- Study Assumptions
  - Analysis will use the most recent Market Efficiency Base Case available at the time.
  - Two simulated years used to study impacts of approved RTEP reliability projects:
    - Near-Term simulations
    - Future simulations
- Process
  - Compare market congestion for near term vs. future simulations.
  - Estimate economic impact of accelerating planned reliability upgrades.

Acceleration Analysis Status and Next Steps

- Completed production cost simulations:
  - 2027 and 2031 study years with AS-IS Topology.
  - 2027 and 2031 study years with RTEP Topology.
- Identify reliability upgrades responsible for congestion reductions between the AS-IS and RTEP topology cases.
- Check the feasibility of accelerating schedules for the identified reliability upgrades.
- Results to be presented at future TEAC meetings.

Congestion Savings of RTEP Enhancements DOM & PJM West

Constraint (1)	Area	Type	2027 Market Conditions (2) 2026 AS-IS Topology ($M)	2027 Market Conditions (2) 2031 RTEP Topology ($M)
Person-Hendrick 230 kV	DOM-CPL	Line	176	21
Charlottesville-Proffit Rd Del Pt 230 kV	DOM	Line	96	
Bristers #1 TR 500/230 kV	DOM	XFMR	36	
Elk Run D.P.-Rollins Ford 230 kV	DOM	Line	19	
Harrowgate-Locks 230 kV	DOM	Line	13	
Pleasant View-Edwards Ferry 230 kV	DOM	Line	13	
Boxwood-Clifford 138 kV	AEP	Line	69	
West Glow-Wurno 138 kV	AEP	Line	18	
Musevillle-Smith Mountain 138 kV	AEP	Line	10	
Dumont-Stillwell 345 kV	AEP-NIPS	Line	18	
Albion-Northport 230 kV	AEP-NIPS	Line	1	
Black Oak #3 TR 500/138 kV	APS	XFMR	92	
Beryl-Cross School 138 kV	APS	Line	55	
E Frankfort (B)-Crete EC 345 kV	COMED	Line	18	

1) Includes top 25 constraints with largest annual congestion decrease in 2027 simulations.
2) 2027 Market Conditions comprise of load, generation expansion, fuel forecasts and other fundamental assumptions at levels forecasted for year 2027.

Congestion Savings of RTEP Enhancements MAAC & Reactive Interfaces

Constraint (1)	Area	Type	2027 Market Conditions (2) 2026 AS-IS Topology ($M)	2027 Market Conditions (2) 2031 RTEP Topology ($M)
Peach Bottom #1 TR 500/230 kV	PECO	XFMR	23	1
Roxbury-Aspen Road Solar 115 kV	PENELEC	Line	76	
Dickerson H-Dickerson #1 230 kV	PEPCO	Line	24	
Dickerson H-Dickerson #2 230 kV	PEPCO	Line	5	
Harwood-Susquehanna #2 230 kV	PL	Line	24	
Siegfried #4 TR 230/138 kV	PL	XFMR	19	
Eldred-Sunbury 230 kV	PL	Line	8	
Safe Harbor-Graceton 230 kV	PL-BGE	Line	129	
Northwest-Conastone 230 kV	BGE	Line	28	
AP South Interface	PJM	Interface	219	
Black Oak-Bedington Interface	PJM	Interface	11	

1) Includes top 25 constraints with largest annual congestion decrease in 2027 simulations.
2) 2027 Market Conditions comprise of load, generation expansion, fuel forecasts and other fundamental assumptions at levels forecasted for year 2027.

RTEP enhancements that are approved but not yet in service account for more than a
$1.1 billion
reduction in congestion when comparing the 2027 simulations with the 2026 ASIS and 2031 RTEP topologies.

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Market Efficiency Update

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- V1 – 09/02/2026 – Original slides posted.

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