



2025 RTEP Assumption Updates

Transmission Expansion Advisory Committee

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PJM Transmission Planning

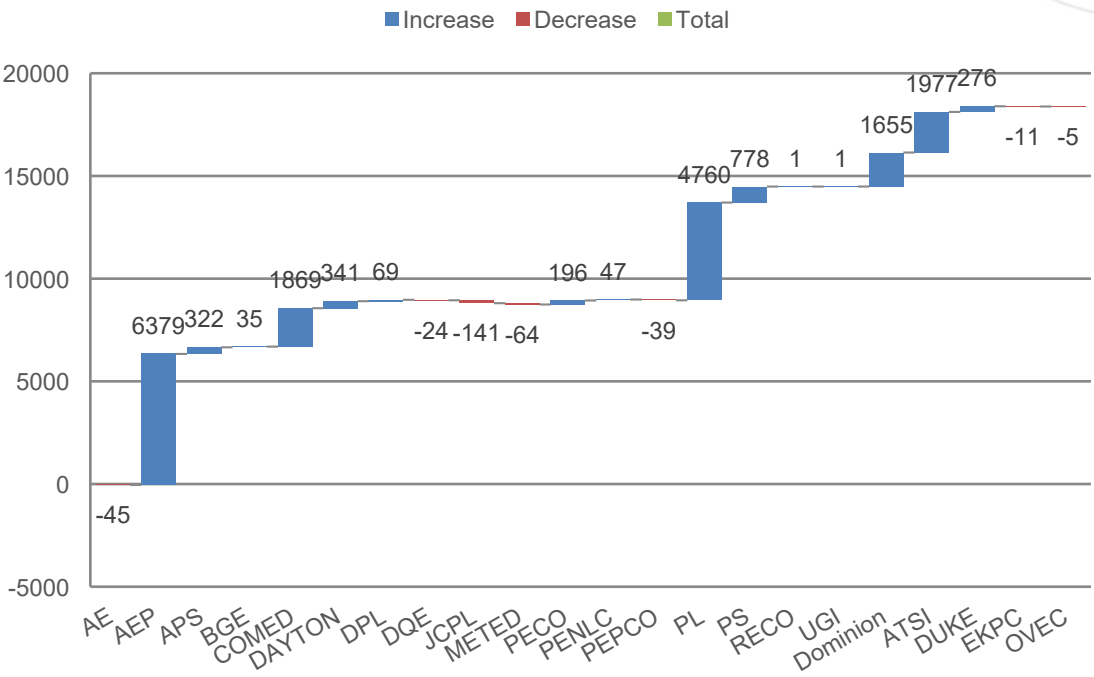
March 4, 2025

- 2025 RTEP W1 - Current Scenarios Considered
- 2025 RTEP Generation-Load Balance: 2030 (5 Year) Discussion
- 2025 RTEP Generation-Load Balance: 2032 (7 Year) Discussion
- 24 Month RTEP Update
- Generator Deliverability: Generic EEFORds
- Wind & Solar CF, Harmer/Helper Dispatch

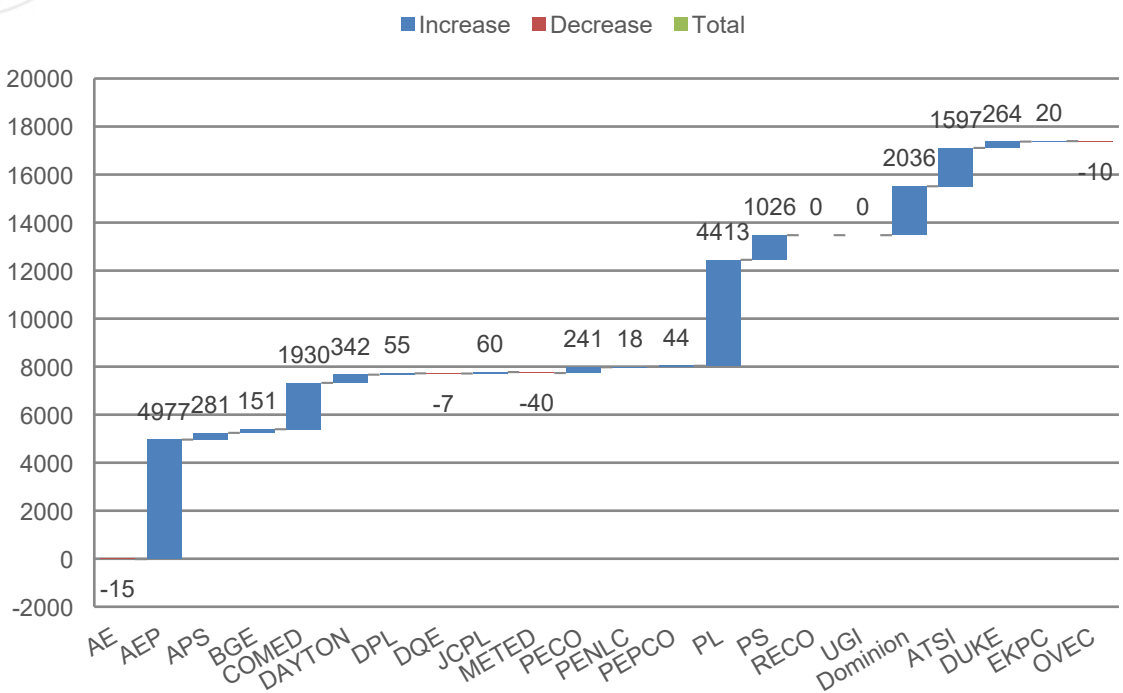
- 5 Year (2030) Analysis
 - Balance load with: Existing generation, GIA/ISA generation, Suspended ISA generation, Fast Lane Queue, CVOW and Chesterfield plants
 - No consideration of a “targeted LOLE”
 - With and without potential delays to OSW in-service
- 7 Year (2032) Analysis
 - Balance load with: Existing generation, GIA/ISA generation, Suspended ISA generation, Fast Lane Queue, plus TC1 Queue and TC2 Queue
 - With and without potential delays to OSW in-service
 - TC1 and TC2:
 - Will mount generation for “resource adequacy purposes” – EHV Backbone modeling when required
 - Will require reliance on BESS Project’s capacity within TC1 and TC2

2025 RTEP Generation-Load Balance: 2030 (5 Year)

RTEP Summer Load Level Comparison (2030 in 2025 Load Forecast Vs. 2029 in 2024 Load Forecast)



RTEP Winter Load Level Comparison (2030 in 2025 Load Forecast Vs. 2029 in 2024 Load Forecast)



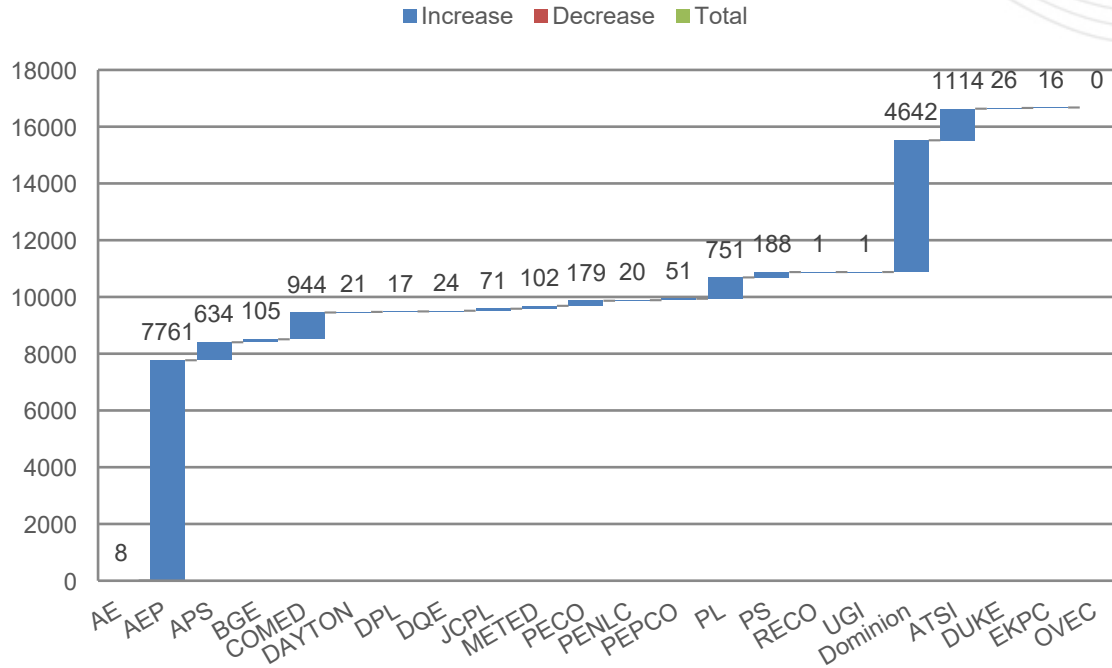
- 2030 load levels in 2025 Load Forecast Vs. 2029 load levels in 2024 Load Forecast: Load increases ~18.4GW (10.6%) in summer, ~17.4GW (11.2%) in Winter, mainly in AEP, DOM, PPL, ComEd, PSEG and ATSI areas.

2025 RTEP Generation-Load Balance: 2030 (5 Year)

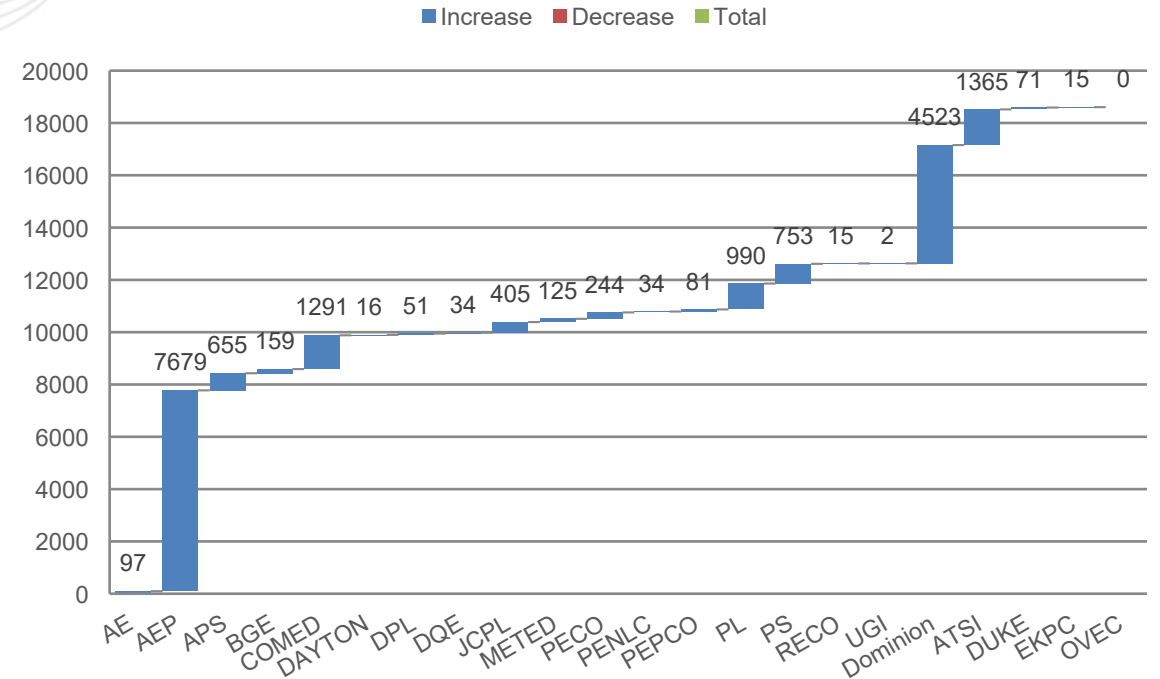
- The existing and ISA/GIA generation are NOT enough to meet the load, more generation is needed.
- With additional Suspended ISA generation, Fast Lane Queue, CVOW and Chesterfield plants:
 - The peak load can be served. The LOLE is **1.6 days per year**, which is 16 times higher than the 1 in 10 (0.1 days per year)
 - Without NJ OSW (2307.6MW) and Delmarva OSW (255MW), the LOLE is **2.0 days per year**, which is 20 times higher than the 1 in 10 (0.1 days per year)
- With additional Suspended ISA generation, Fast Lane Queue, PLUS TC1 Queue and TC2 Queue (For information purpose only. This won't be studied in 2025 RTEP 2030 analysis):
 - The LOLE is **0.095 days per year**, which is lower (i.e. "better") than the 1 in 10 (0.1 days per year)
 - Without the large majority of the OSW, The LOLE is **0.18 days per year**, which is almost twice the 1 in 10 level (0.1 days per year)

2025 RTEP Generation-Load Balance – 2032 (7 Year)

Summer Load level Comparison (2032 Vs. 2030)



Winter Load Level Comparison (2032 Vs. 2030)



- 2032, comparing to 2030, the load is further increased by ~16.7GW in summer, ~18.6GW in winter, mainly in AEP, APS, ComEd, PPL, DOM, and ATSI

- With additional Suspended ISA generation, Fast Lane Queue, TC1 Queue and TC2 Queue:
 - The peak load can be served. The LOLE is 2.3 days per year. This value is 23 times higher than the 1 in 10 (0.1 days per year).

- As part of the 24-month RTEP cycle, a year 7 (2032) base case will be developed and evaluated part of the 2025 RTEP
- The year 7 case will be based on the 2030 Summer case that is developed part of the 2025 RTEP
 - Purpose: To identify and develop longer lead transmission upgrades and right size near-term upgrades with longer term needs.

- PJM will account for the PJM States (ISAC) input towards the development of the 2025 RTEP Scenarios. More details to follow in upcoming TEAC meetings.
- PJM will also run scenarios capturing impact of potential delays to OSW development (In NJ and DE)

- Generic EEFORD values developed for 2029 RTEP base case 5.12%

- Capacity weighted by fuel type

- Each unit within a class assigned the average EEFORD for that class

Gen Class	Avg EEFORD
Diesel	13.87%
Fossil Steam	11.84%
Hydro	9.06%
Combustion Turbine	5.98%
Pumped Storage	5.77%
Combined Cycle	4.01%
Nuclear	1.45%
Wind	0.00%
Solar	0.00%
Battery	5.01%

Each unit within a class assigned the average EEFORD for that class



Capacity Factors For Wind & Solar Base Case Dispatch As Percent of Maximum Facility Output

MAAC	Summer CF*	Winter CF	Light Load CF
Solar Fixed	46%	5%	51%
Solar Tracking	64%	5%	53%
Onshore Wind	15%	38%	27%
Offshore Wind	36%	55%	46%

PJM West	Summer CF*	Winter CF	Light Load CF
Solar Fixed	61%	5%	56%
Solar Tracking	62%	5%	51%
Onshore Wind	19%	42%	34%
Offshore Wind	N/A	N/A	N/A

DOM	Summer CF*	Winter CF	Light Load CF
Solar Fixed	50%	5%	54%
Solar Tracking	63%	5%	58%
Onshore Wind	21%	40%	32%
Offshore Wind	34%	58%	49%

* Use lower of CIR or Capacity Factor (CF)

Wind & Solar Harmer Dispatch As Percent of Maximum Facility Output

MAAC	Summer**	Winter	Light Load
Solar Fixed (P80%)	65%	*	*
Solar Tracking (P80%)	85%	*	*
Onshore Wind (P90%)	37%	71%	64%
Offshore Wind (P80%)	71%	95%	88%

PJM West	Summer**	Winter	LL
Solar Fixed (P80%)	81%	*	*
Solar Tracking (P80%)	79%	*	*
Onshore Wind (P90%)	51%	84%	80%
Offshore Wind (P80%)	N/A	N/A	N/A

DOM	Summer**	Winter	LL
Solar Fixed (P80%)	69%	*	*
Solar Tracking (P80%)	79%	*	*
Onshore Wind (P90%)	47%	77%	70%
Offshore Wind (P80%)	71%	97%	92%

* Not applicable

**CIR level will be used for summer, single contingency testing

Wind & Solar Helper Dispatch As Percent of Maximum Facility Output

MAAC	Summer P20%	Winter P20%	Light Load (P20%)
Solar Fixed	28%	0%	23%
Solar Tracking	41%	0%	24%
Onshore Wind	0%	14%	5%
Offshore Wind	0%	14%	7%

PJM West	Summer P20%	Winter P20%	Light Load (P20%)
Solar Fixed	41%	0%	26%
Solar Tracking	46%	0%	25%
Onshore Wind	0%	12%	5%
Offshore Wind	N/A	N/A	N/A

DOM	Summer P20%	Winter P20%	Light Load (P20%)
Solar Fixed	33%	0%	29%
Solar Tracking	46%	0%	32%
Onshore Wind	0%	16%	7%
Offshore Wind	0%	15%	9%

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2025 RTEP Assumptions



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Version No.	Date	Description
1	2/27/2025	<ul style="list-style-type: none">• Original slides posted
2	3/3/2025	<ul style="list-style-type: none">• Slide #2, corrected typo from 2037 to 2032• Slides #5 and 7, updated LOLE values• Slide #14, corrected typo