Market Efficiency Update

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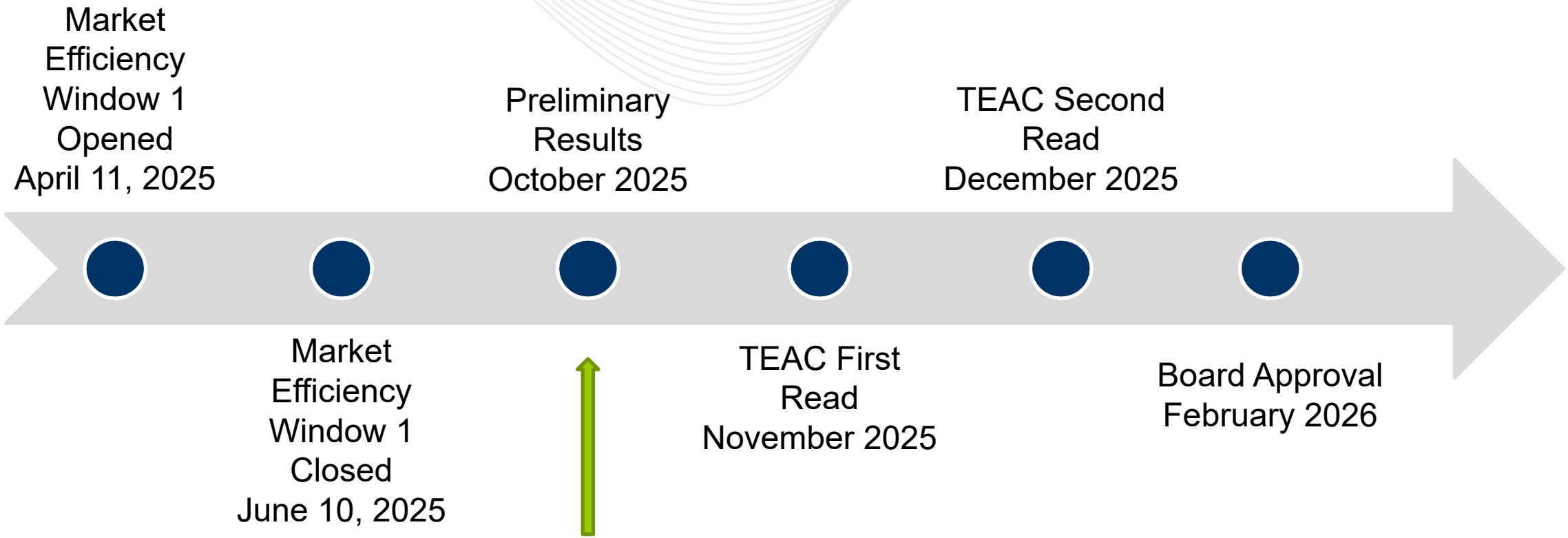
Manager Market Simulation

Transmission Expansion Advisory Committee

October 8, 2025

2025 Market Efficiency Timeline



2024/25 Market Efficiency Window 1 Update

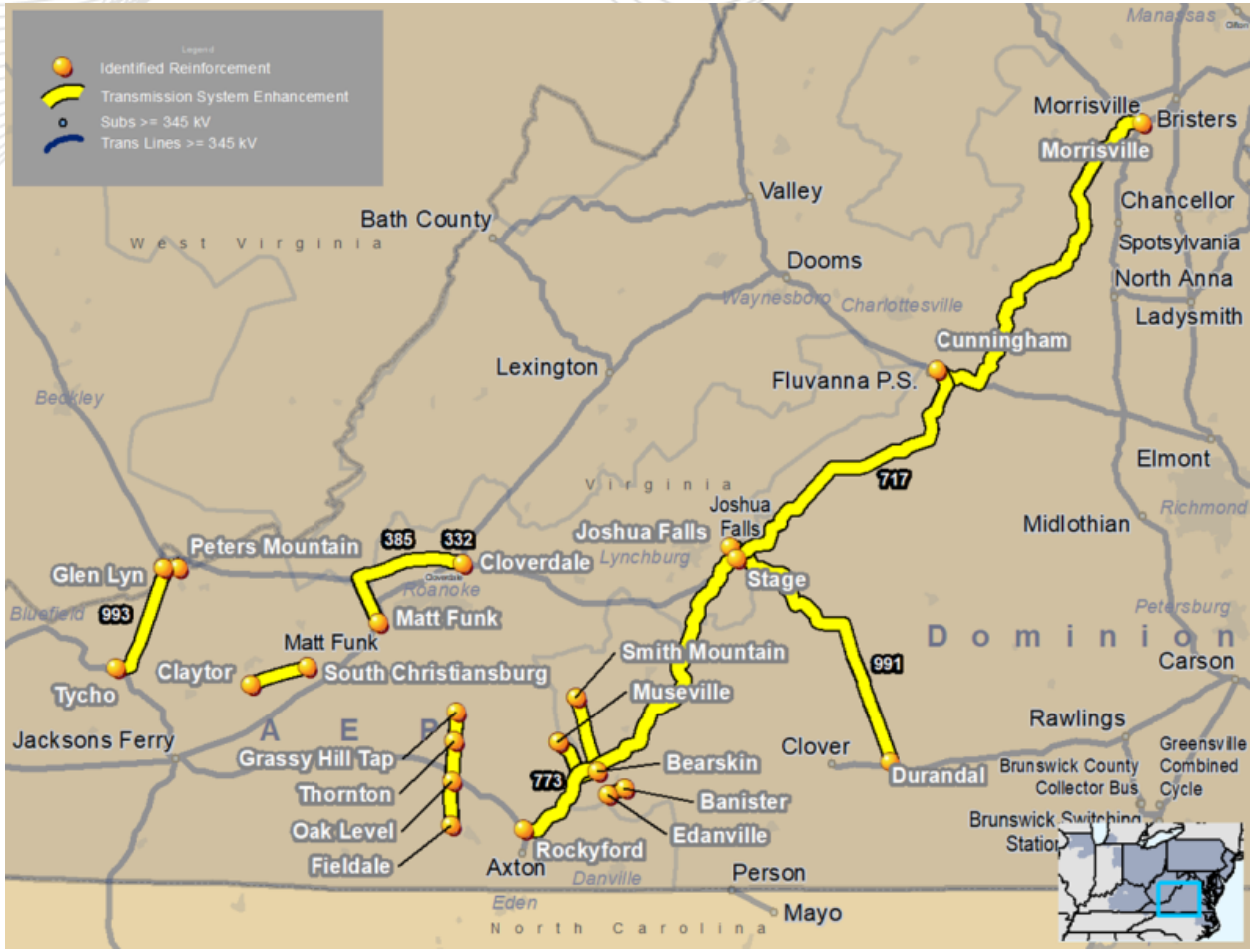
2024/25 ME Window 1 - Status

- 2024/25 Long-Term Market Efficiency Window 1 opened on 4/11/25 and closed 6/10/25.
  - Market Efficiency Base Case, Sensitivity Scenarios, and Congestion Drivers for the window posted on the Market Efficiency secure page.
  - Updated Event Files were posted on the Market Efficiency secure page at the beginning of October.
    - Updated Joshua Falls-Yeat Interface definition to Cloverdale-Joshua Falls.
    - Updated interface limits to align with projected load growth in the 2032 and 2035 scenarios.
    - Assumed network upgrades for some future units included in the 2035 scenario.
    - Changes do not have significant impact on the posted congestion drivers.
  - Updated congestion file posted on the Market Efficiency secure page.
- Received 14 proposals from 5 entities.
  - Redacted versions of proposals are posted on the Redacted Proposals page.
  - Proposal descriptions can be found in the Market Efficiency Update presented at August TEAC.

2024/25 ME Window 1
Preliminary Results
Museville-Smith Mountain 138 kV (AEP)

2024/25 ME Window 1 - Museville-Smith Mountain 138 kV

- 6 proposals received.
- 3 greenfield proposals with in-service year costs from $270.1M to $1.568B:
  - Proposal No. 717: 765 kV & 500 kV substations and transmission lines.
  - Proposal No. 993: 765/345 kV substation and 345 kV transmission lines.
  - Proposal No. 991: 765/500 kV substation and 765 kV transmission line.
- 3 upgrade proposals with in-service year costs from $1.8M to $131.6M.



Museville-Smith Mountain 138 kV - Initial Review Conclusions

- Impacts on the congestion driver
  - Proposal Nos. 332 and 385 completely solve the identified congestion driver.
  - Proposal Nos. 717, 733, 991 solve most of the identified congestion driver.
  - Proposal No. 993 does not solve the identified congestion driver.
- B/C ratio
  - All proposals exceed the benefit to cost ratio threshold of 1.25.

Museville-Smith Mountain 138 kV - Preliminary Results

Proposal ID	332	385	717	733	991	993
Project Type	Upgrade	Upgrade	Greenfield	Upgrade	Greenfield	Greenfield
B/C Ratio Metric	Lower Voltage	Lower Voltage	Regional	Lower Voltage	Regional	Lower Voltage
In-Service Cost ($MM)*	$86.11	$131.64	$1,568.72	$1.81	$520.38	$270.09
Cost Containment*	No	No	Yes	No	Yes	Yes
In-Service Year	2029	2029	2030	2027	2029	2029
% Cong Driver Mitigated	100%	100%	81%	75%	82%	17%
Base Case B/C Ratio	20.55	13.44	2.97	136.55	2.68	6.45

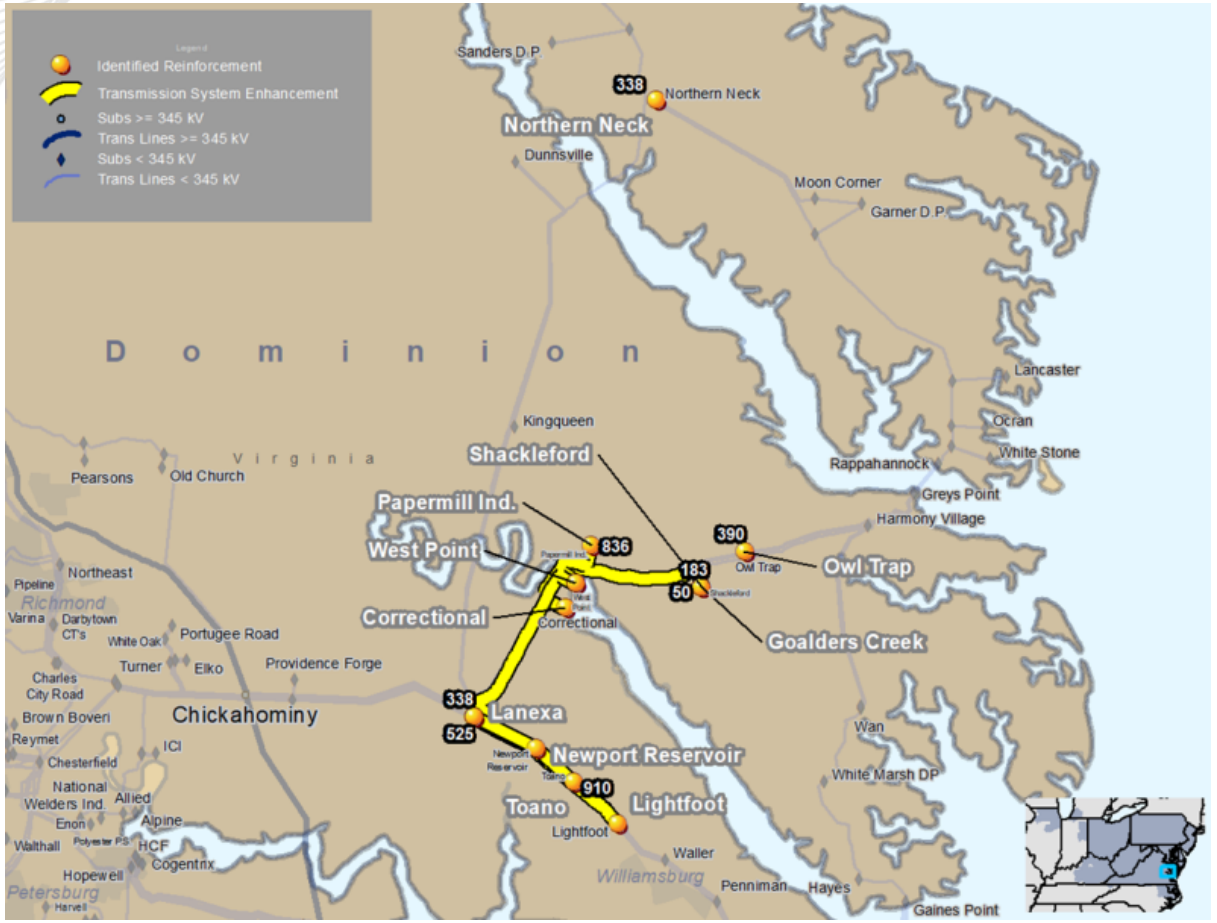
Further analysis will be coordinated with the reliability window for which multiple proposals were submitted that may impact this facility.

* Note: Costs under review by PJM

2024/25 ME Window 1
Preliminary Results
West Point-Lanexa 115 kV

2024/25 ME Window 1 - West Point-Lanexa 115 kV

- 7 proposals received.
- 2 Battery Energy Storage System (BESS) proposals with in-service year costs of $83.9M and $221.7M.
- 3 upgrade proposals with in-service year costs from $28.1M to $90.9M.
- 2 substation expansion proposals with in-service year costs of $21.4M and $23.4M.



West Point-Lanexa 115 kV - Initial Review Conclusions

- Impacts on the congestion driver
  - Proposal Nos. 338, 390, 525, 836 and 910 solve the identified congestion driver.
  - Proposal Nos. 50 and 183 do not solve the identified congestion driver.
- B/C ratio
  - Proposal Nos. 390 and 525 both exceed the benefit to cost ratio threshold of 1.25.
  - Proposal Nos. 50, 183, 338, 836, 910 fail to meet the benefit to cost ratio threshold of 1.25.

West Point-Lanexa 115 kV - Preliminary Results

Proposal ID	50	183	338	390	525	836	910
Project Type	Upgrade	Upgrade	Upgrade	Upgrade	Upgrade	Upgrade	Upgrade
B/C Ratio Metric	Lower Voltage	Lower Voltage	Lower Voltage	Lower Voltage	Lower Voltage	Lower Voltage	Lower Voltage
In-Service Cost ($MM)*	$83.92	$221.74	$28.11	$21.41	$23.41	$62.58	$90.89
Cost Containment*	No	No	No	No	No	No	No
In-Service Year	2029	2029	2028	2029	2029	2028	2028
% Cong Driver Mitigated	52%	59%	100%	100%	100%	100%	100%
Base Case B/C Ratio	0.26	0.30	0.97	3.05	2.71	0.13	0.55

Further analysis to be conducted before determining final recommendation.

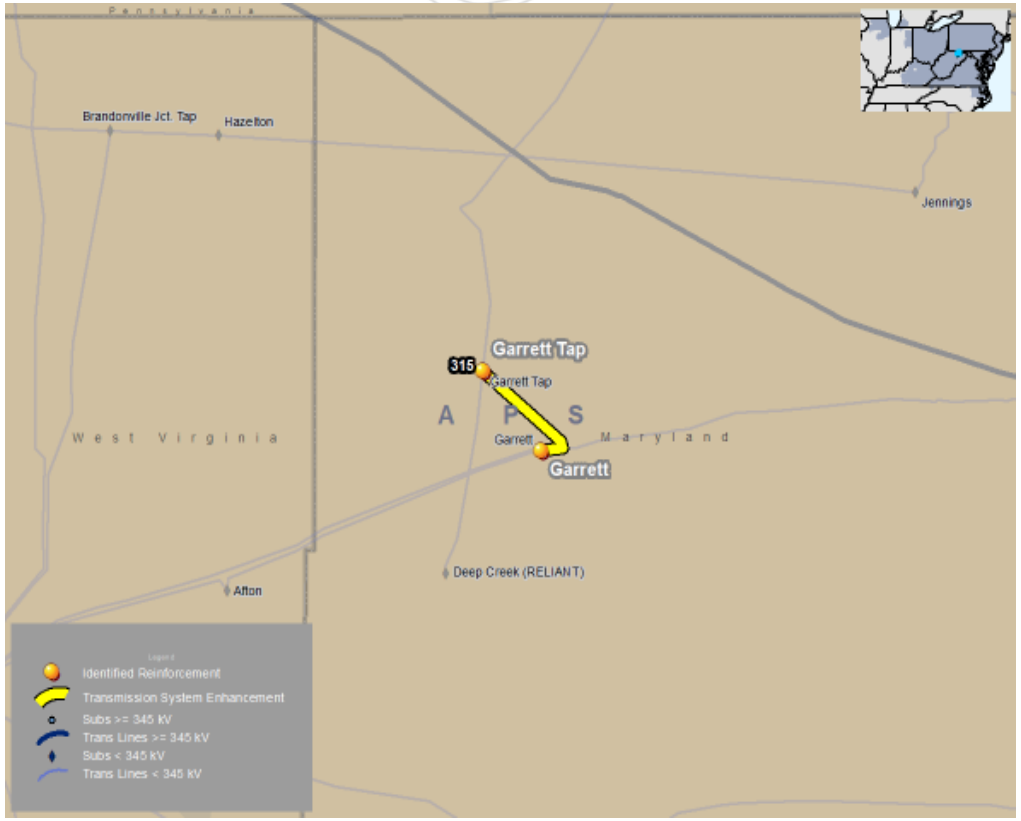
* Note: Costs under review by PJM

2024/25 ME Window 1
Preliminary Results
Garrett-Garrett Tap 115 kV

2024/25 ME Window 1 - Garrett-Garrett Tap 115 kV

- 1 upgrade proposal received (Proposal No. 315).
  - Proposal in-service year cost of $9.9M.
  - Proposal No. 315 was also submitted to the 2025W1 reliability window.

- Garrett-Garrett Tap 115 kV congestion driver will be addressed in 2025W1 reliability window.



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Market Efficiency Update

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Revision History

- V1 – 10/3/2025 – Original slides posted.

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