



# Multi-TO Project-Outage Coordination (MTOPOC)

Joe Rushing

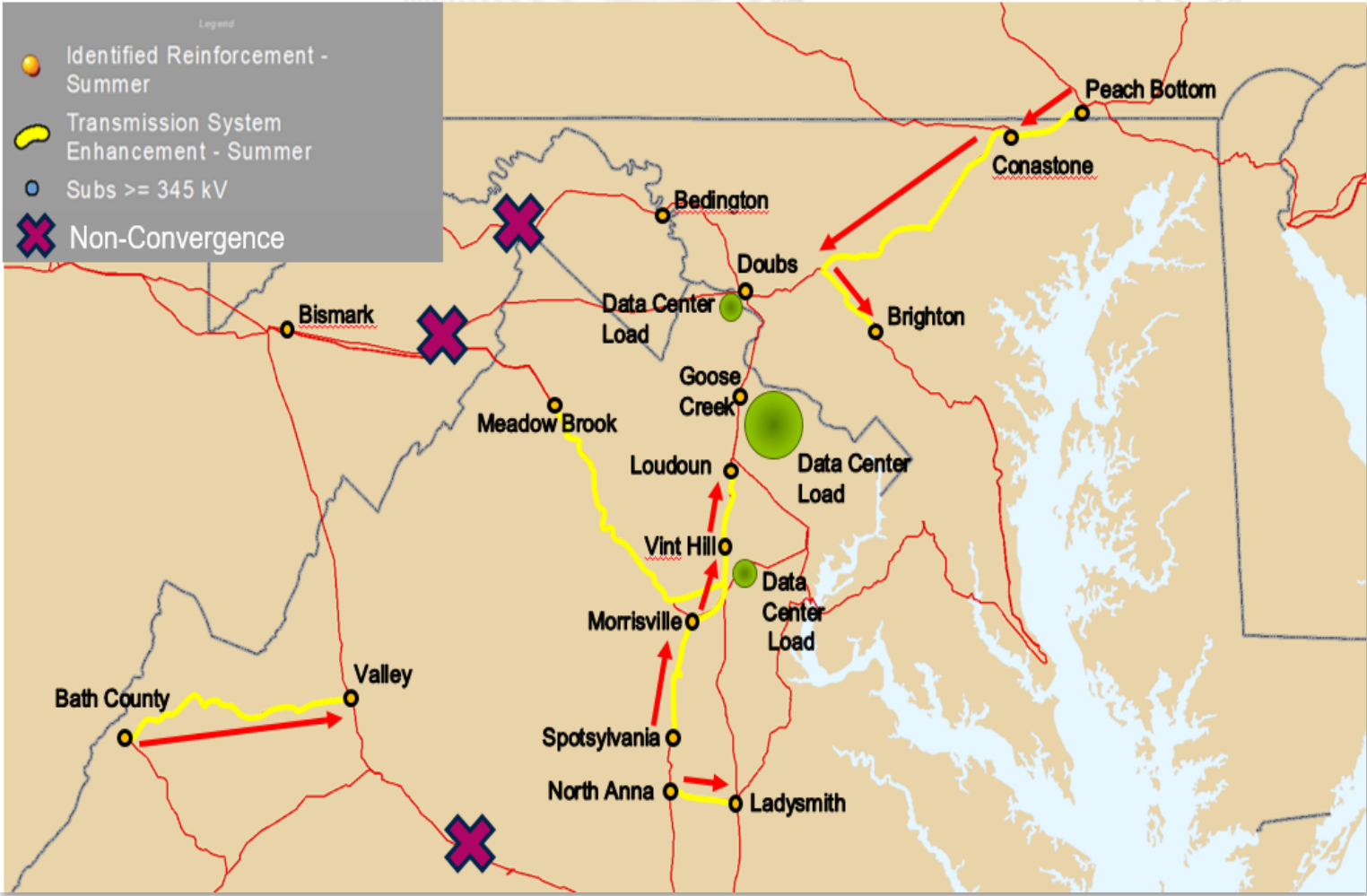
Transmission Operations

November 8, 2024

PJM has unprecedented data center load growth:  
**~7,500 MW currently forecasted**  
 by 2027–28 in Dominion (Northern Virginia)  
 and APS (Doubs).

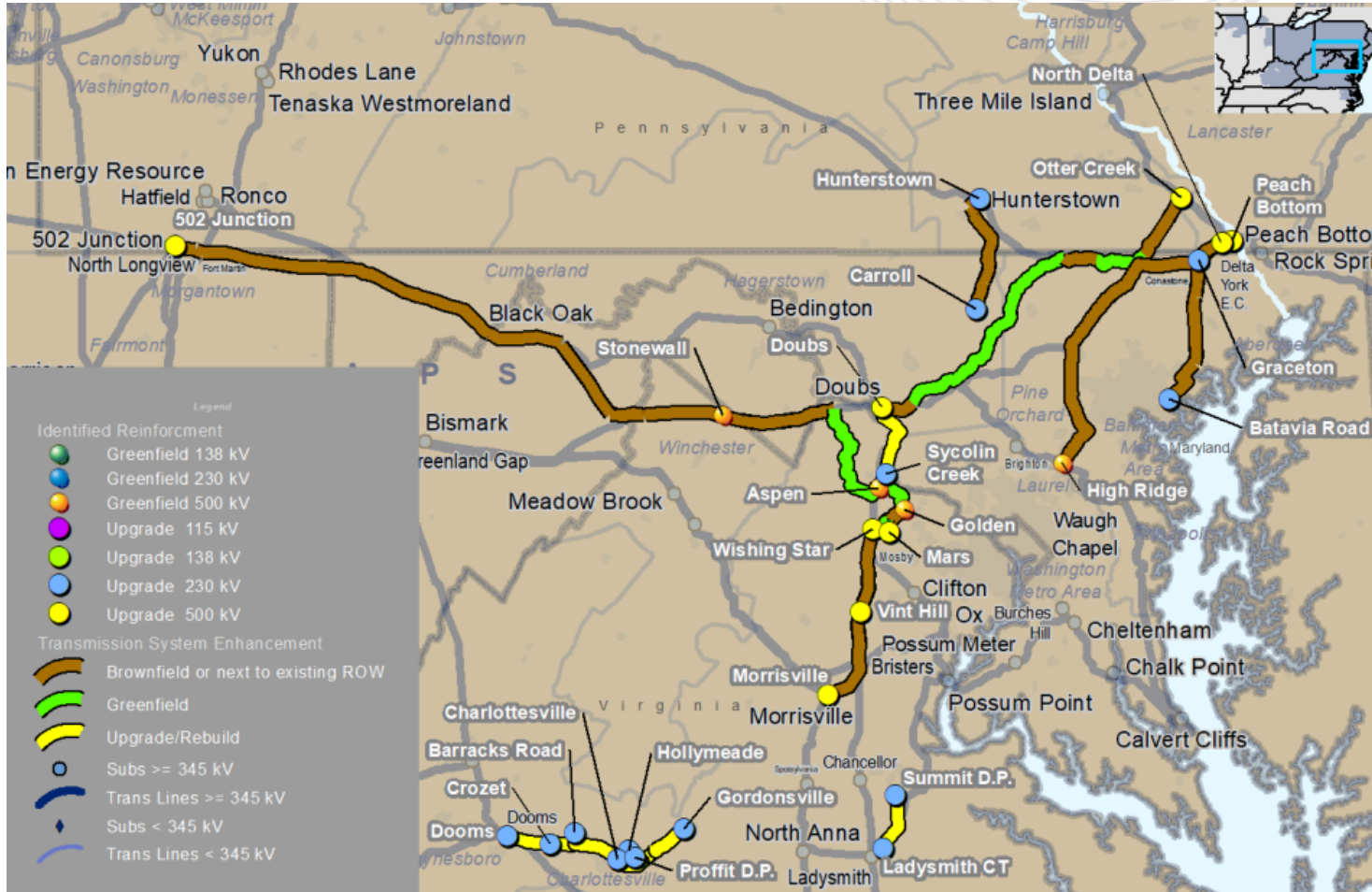
**11,100 MW deactivation announced**  
 ~ 5,300 MW of retirements occurred  
 after the 2022 RTEP case was created.

- The vast majority of the new generation with signed ISAs has been solar.  
*Solar has low availability during the winter period.*
- Replacement generation is coming from the region to the east of Peach Bottom as well as west of Doubs to meet projected load growth.





# Overview of Selected Proposals

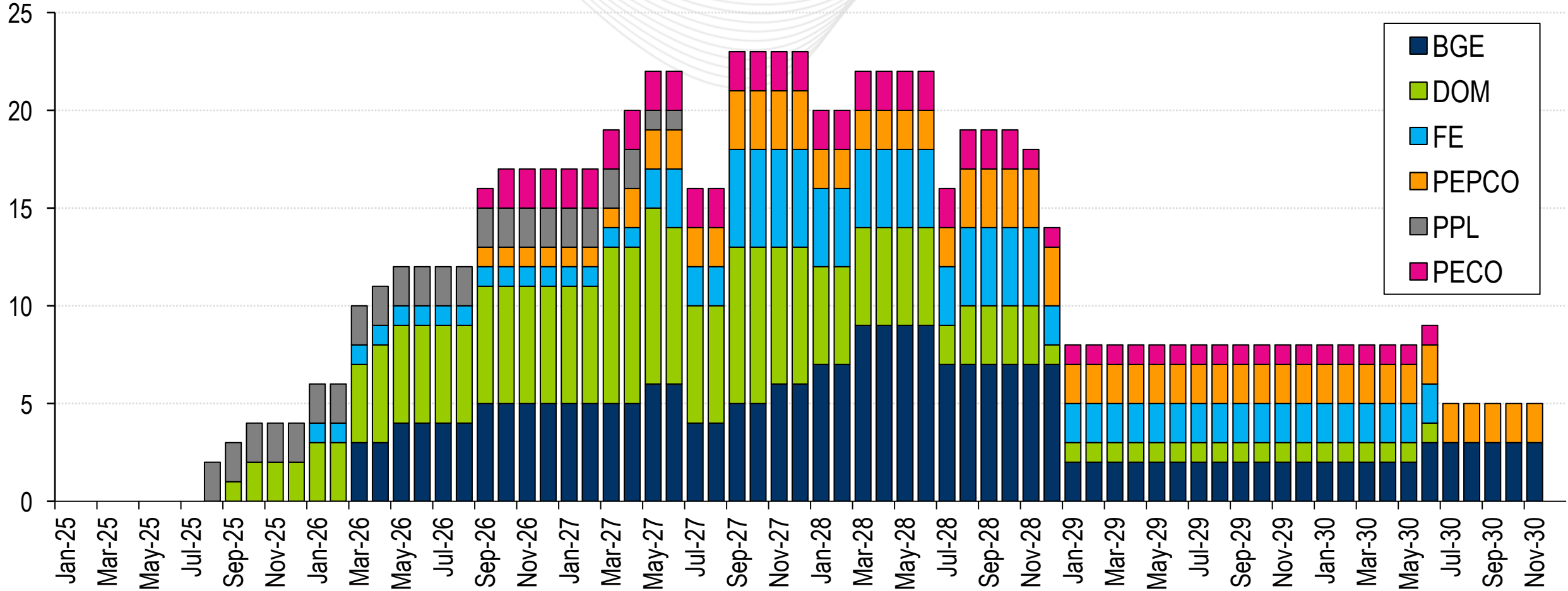


Cluster	Overview	Proposal Cost (\$M)
<b>East</b>	<ul style="list-style-type: none"> <li>▪ New and upgrade 500 kV lines</li> <li>▪ New and expanded 500 kV stations</li> </ul>	\$1,443.12
<b>West</b>	<ul style="list-style-type: none"> <li>▪ New 500 kV line</li> <li>▪ New 500 kV station</li> <li>▪ New voltage support devices</li> </ul>	\$940.85
<b>Northern VA</b>	<ul style="list-style-type: none"> <li>▪ New 500 kV and 230 kV lines</li> <li>▪ New 500 kV station</li> </ul>	\$1,418.3
<b>South</b>	<ul style="list-style-type: none"> <li>▪ New and upgraded 500 kV and 230 kV lines</li> <li>▪ New voltage support devices</li> </ul>	\$1,265.85
<b>Local</b>	Station reconfiguration	\$11.59
<b>Short Circuit</b>	500 kV and 230 KV Breaker replacement	\$63.27
<b>Total</b>		<b>\$5,142.98</b>



# Overall Project Distribution

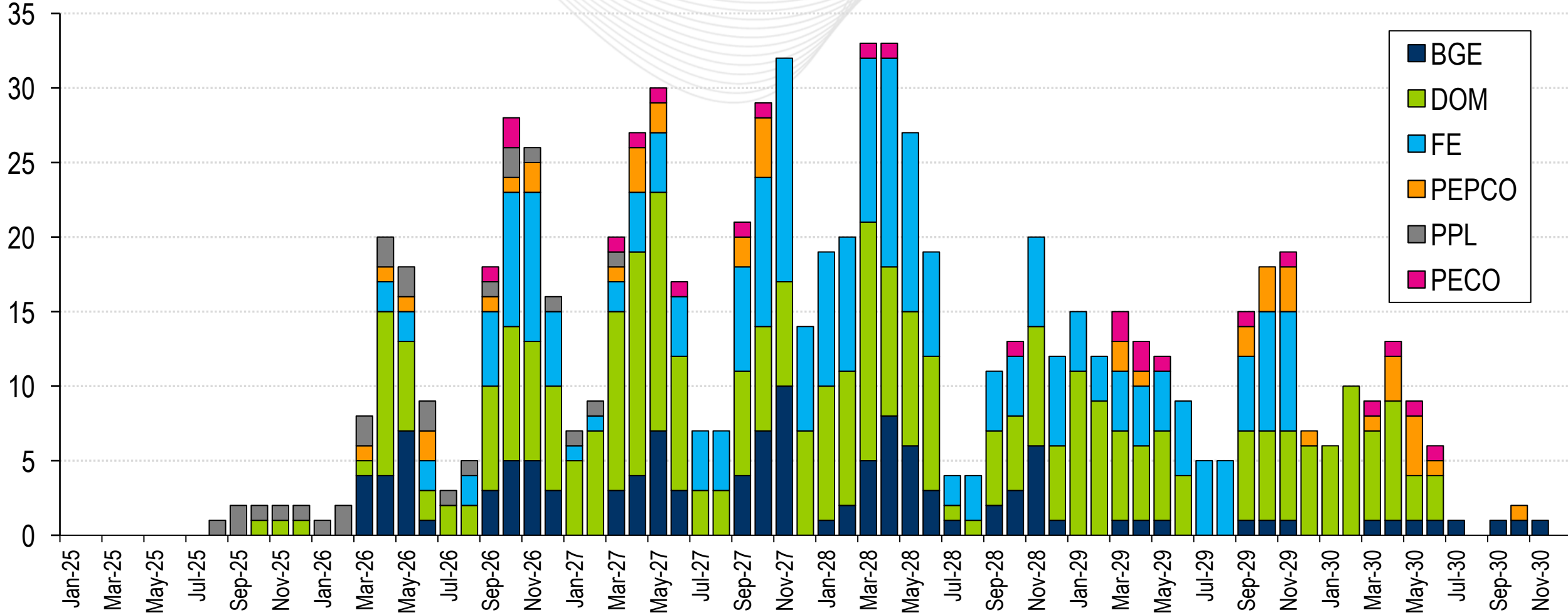
## Multi-TO Project-Outage Coordination Projects

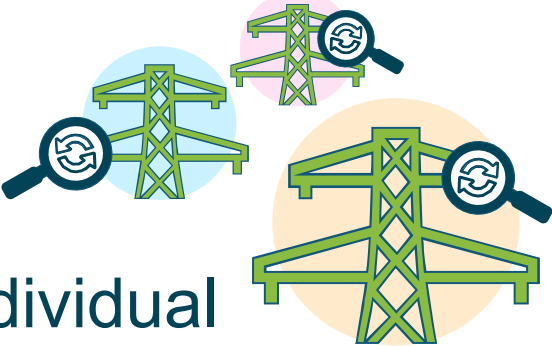




# Overall Outage Distribution

## Multi-TO Project-Outage Coordination – Outages






## Individual Coordination

### Transmission Owners

- **Submit** preferred timeline and outage order needed for each project.
- **Identify/resolve** potential outage conflicts *within* your own territories.



## Full Coordination

### PJM

- **Populate** Prioritization Scoring Matrix.
- **Identify** efficient schedules that minimize conflicting outages *between* TOs.



### Transmission Owners

- Convert project sequence to eDart outages based on agreed schedules.
- Keep PJM informed of schedule changes and risks.

### PJM

- Share study findings with TOs.
- Ensure open and consistent communication.

## Extended Study Timeframe & Tools

**6 months to 2 years**

**PSS/E**

### INPUTS

- Model On Demand RTEP cases from PJM planning  
*Available cases are seasonal (Winter/Summer)*
- Modify the model and update contingency files
- IDEVS as needed

- 6 Transmission Zones/Owners
  - PSEG, NextEra and TranSource also have projects within these 6 zones
- Quarterly in-person meetings
  - Over 30 member participants in the room, plus more than 60 on the WebEx for last meeting
- PJM SME leads from Transmission Ops



- **Generation Outage Submission**

- Current rules specify at least 30-day notice for generation outages, PJM is requesting Generation Owners in the BGE, PEPCO, Dominion and surrounding areas to enter outages expected to occur in the next 2-3 years as early as possible.
  - NOTE: PJM will not be able to accommodate as many gen outages as we have in the past. Transmission outages related to system upgrades may be given priority

- **Increased Risk Acceptance and Congestion**

- Due to the high volume of reliability upgrades and associated outages, coupled with load growth and generation retirements, there will be increased congestion
- There will also be times that PJM and the Transmission Owners will need to take on more risk in the near term to avoid greater risks in the long term.
  - This may result in an increase in emergency procedures (i.e. PCLLRWs)

Presenter & SMEs:  
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Member Hotline

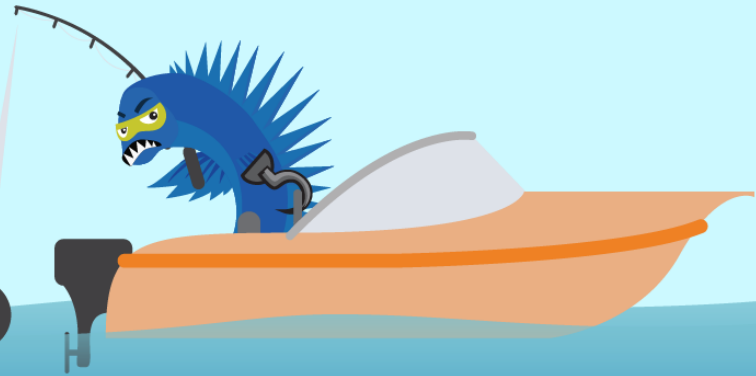
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