

# Markets Report

Members Committee  
October 23, 2025

- PJM Wholesale Cost is now being calculated exclusively by Monitoring Analytics. ([Slide 4](#))
- Slides pertaining to weather conditions, in addition to slides showing average fuel prices, generation on-line fuel mixes, and System Marginal Prices have been combined into a **Market Conditions** section. ([Slides 6-19](#))
- In September, temperatures were below a typical level. The sum of Heating and Cooling Degree Days was below the historic average. ([Slides 7-8](#))
- Energy use was below its historic average for September. ([Slides 7-8](#))
- In September, uplift exceeded \$2.25M on no days. ([Slide 24](#))

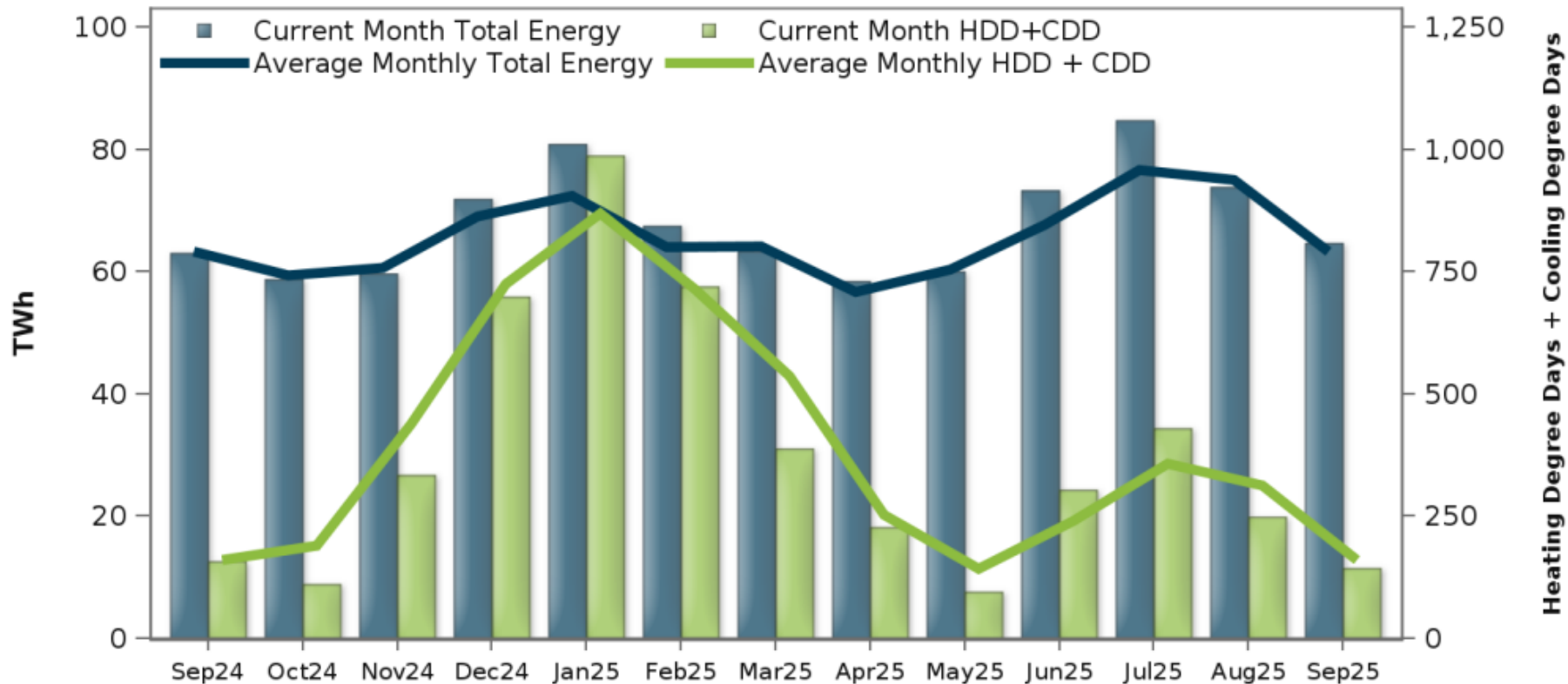
- Load-weighted average LMP for 2025 is \$50.53/MWh: ([Slides 32-33](#))
  - September 2025 was \$43.70/MWh, which is higher than September 2024 (\$31.80/MWh) and September 2023 (\$31.60/MWh).
- There were eight 5-minute intervals that experienced shortage pricing in September. ([Slide 31](#), Report Appendix)
- FTR revenue adequacy for the month of September is 89% and the 2025-2026 Planning Year is currently funded at 100%. ([Slides 49-52](#))
- Congestion values in 2025 thus far have been higher than those seen in 2024. ([Slide 50](#))
- Regulation and Synchronized Reserve market costs have generally tracked with energy prices over time. ([Slides 66-68](#))

- PJM Wholesale Cost is now being calculated and published exclusively by Monitoring Analytics (IMM).
- Annual and quarterly updates can be found in the IMM's State of the Market Reports:
  - [https://www.monitoringanalytics.com/reports/PJM\\_State\\_of\\_the\\_Market/2024.shtml](https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2024.shtml)
- Monthly updates can be found in Excel format on the IMM's website:
  - [https://www.monitoringanalytics.com/data/pjm\\_price.shtml](https://www.monitoringanalytics.com/data/pjm_price.shtml)
- Year-to-Date updates will be presented by the IMM at the monthly MC Webinar.
- PJM will continue to monitor the IMM's Wholesale Cost calculation.

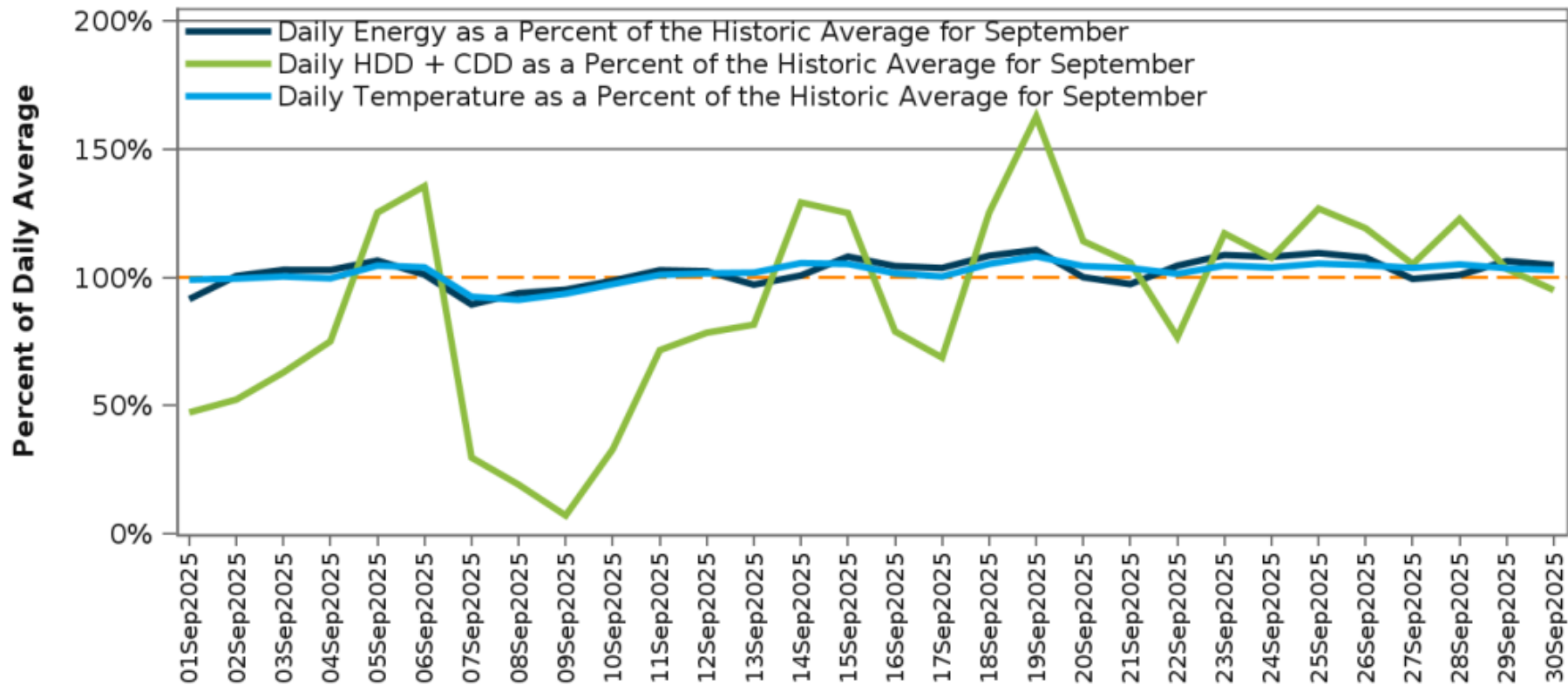
# Market Conditions

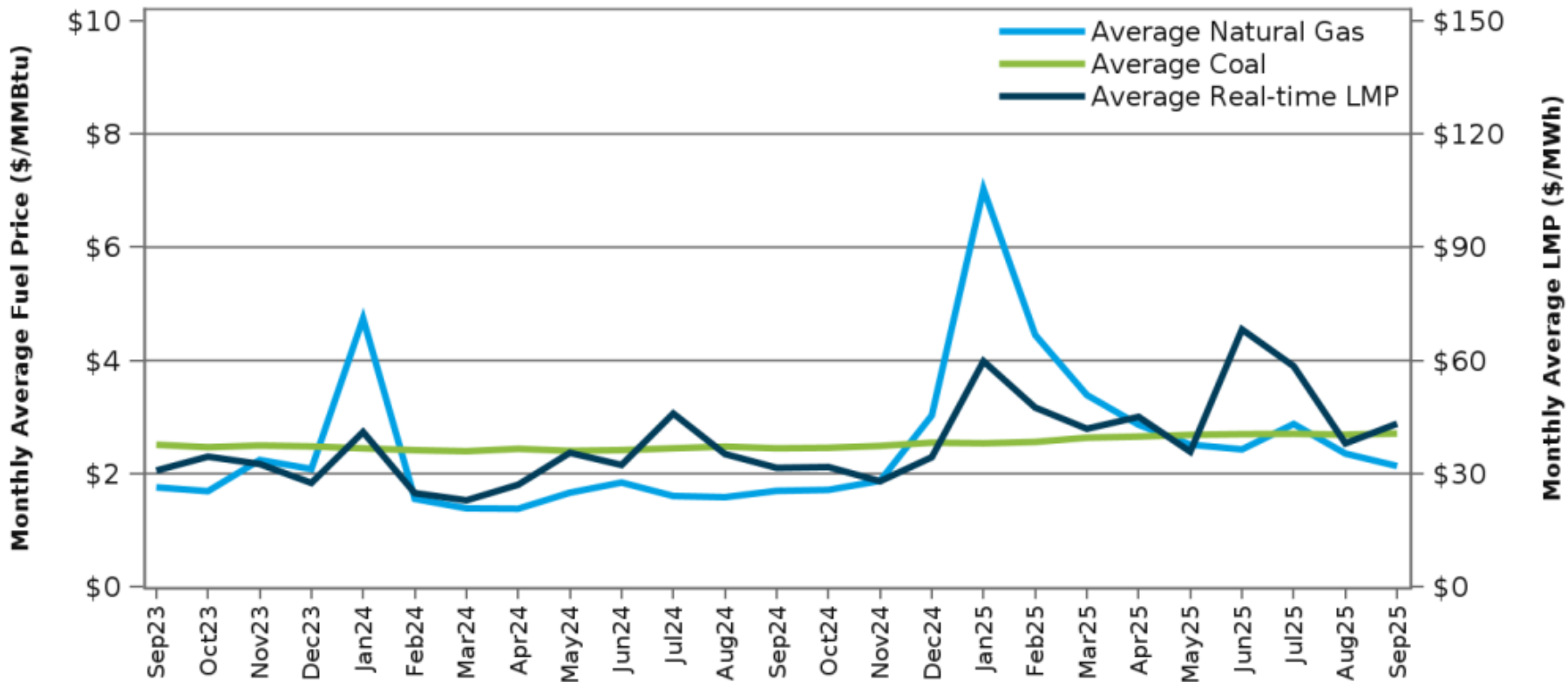
- The weather parameter shown in the following slide is a monthly sum of daily Heating Degree Days (HDD) and Cooling Degree Days (CDD).
- Degree days represent a deviation from a baseline temperature, in this case 60 degrees for HDD and 65 degrees for CDD. As temperatures get more extreme, colder or hotter, either HDDs or CDDs, respectively, will increase.
- Typically, winter months will only record HDDs, while summer months will only record CDDs. Shoulder months may have both HDDs and CDDs.
- Degree Days are calculated using a daily load weighting that weights values from stations in each TO zone according to the zonal contribution to the RTO peak on that day.
- Average values use data from 1998 to the most recent complete year, in this case, 2024. Averages include load data for all of TO zones in the current RTO footprint.

# Historic Average Weather and Energy versus Current Month

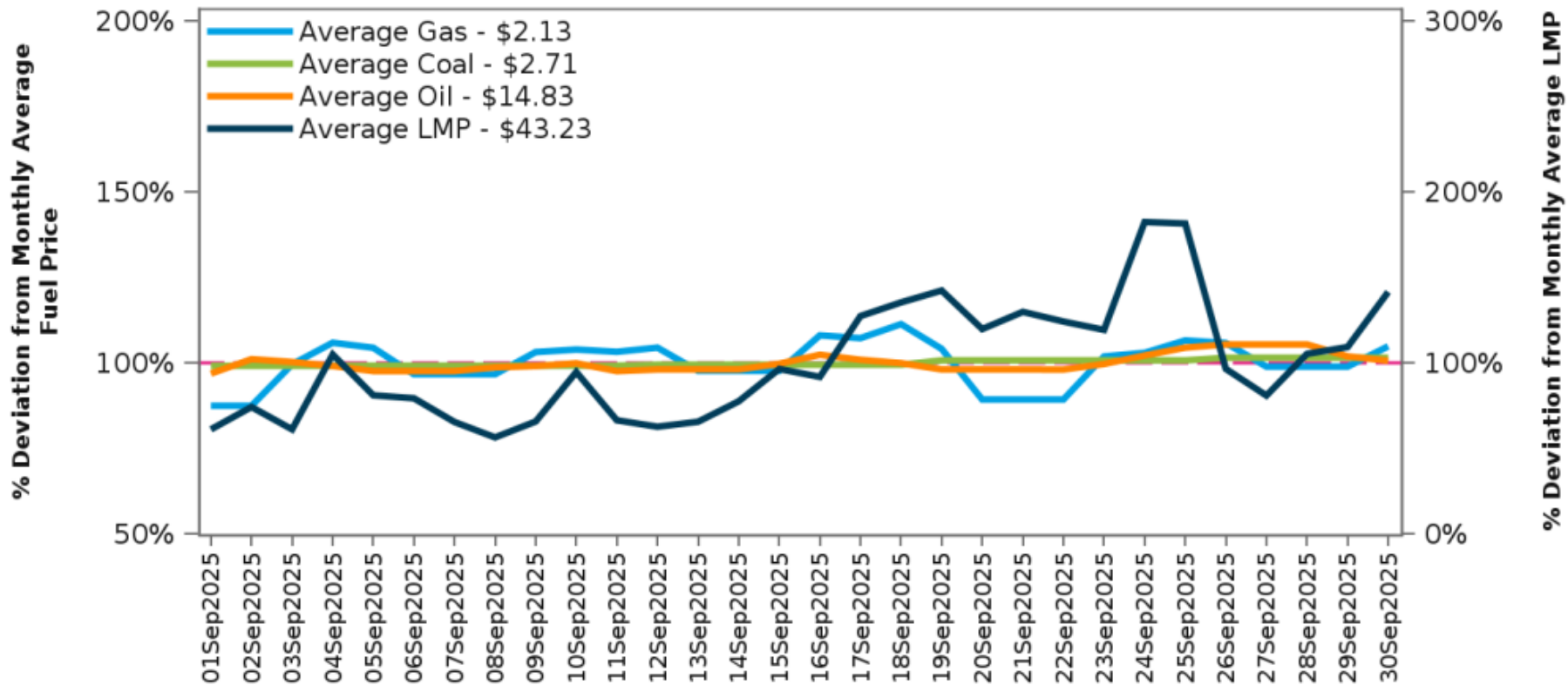


# Historic Average Weather and Energy versus Current Month - Daily



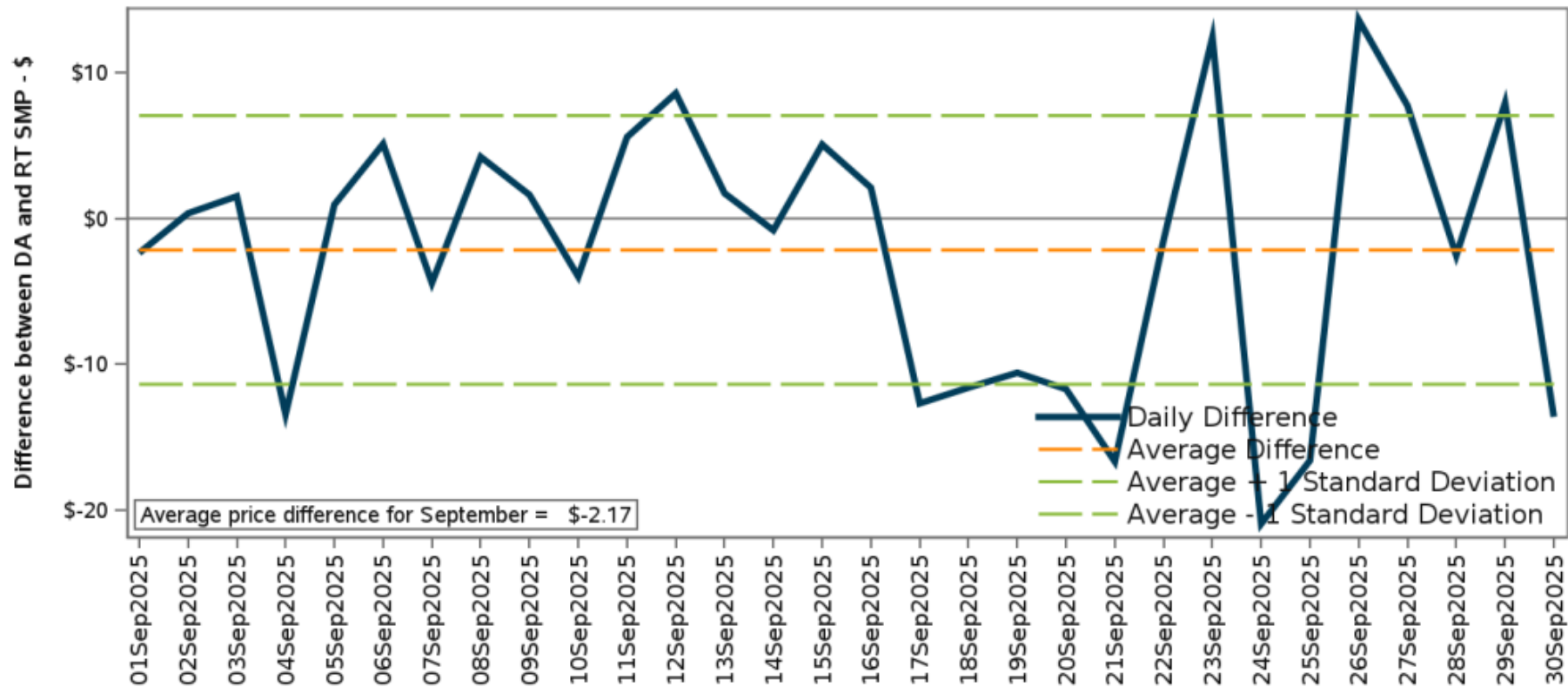


Fuel Price Source: S&P Global Platts



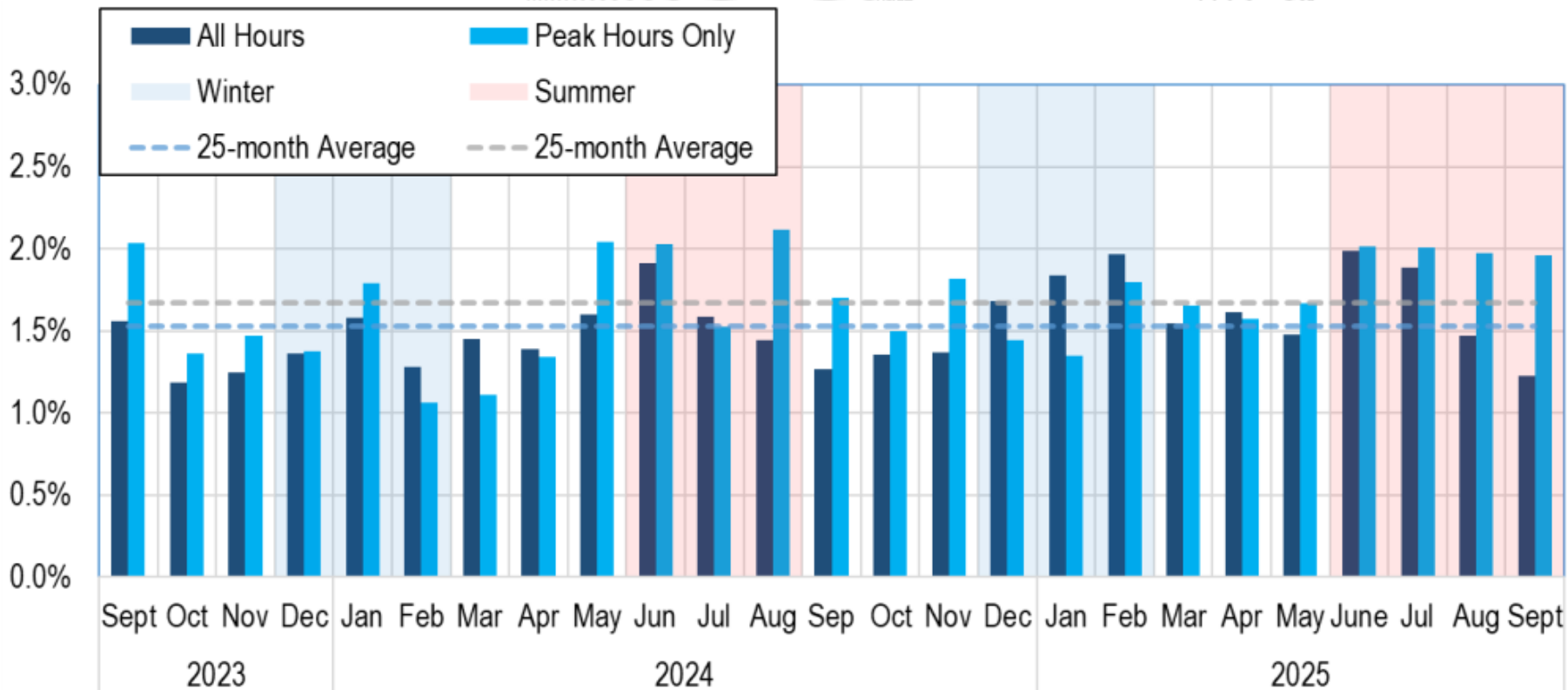
Fuel Price Source: S&P Global Platts

# Daily Difference Between Day-Ahead and Real-Time System Marginal Prices

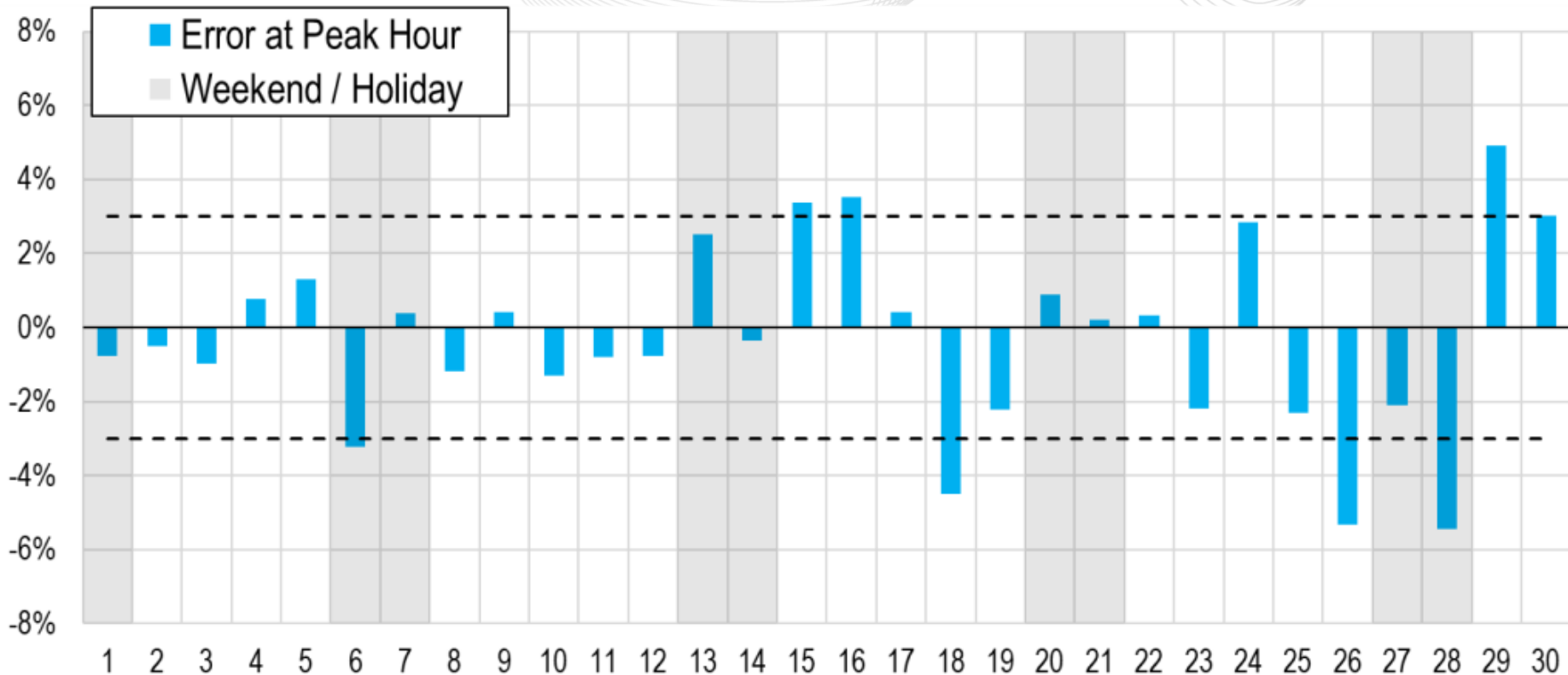


Positive values represent days when the DA daily average price was higher than RT. Negative values represent days when the DA price was lower.

# Load Forecast Error - Monthly Absolute Error, 10:00 Forecast

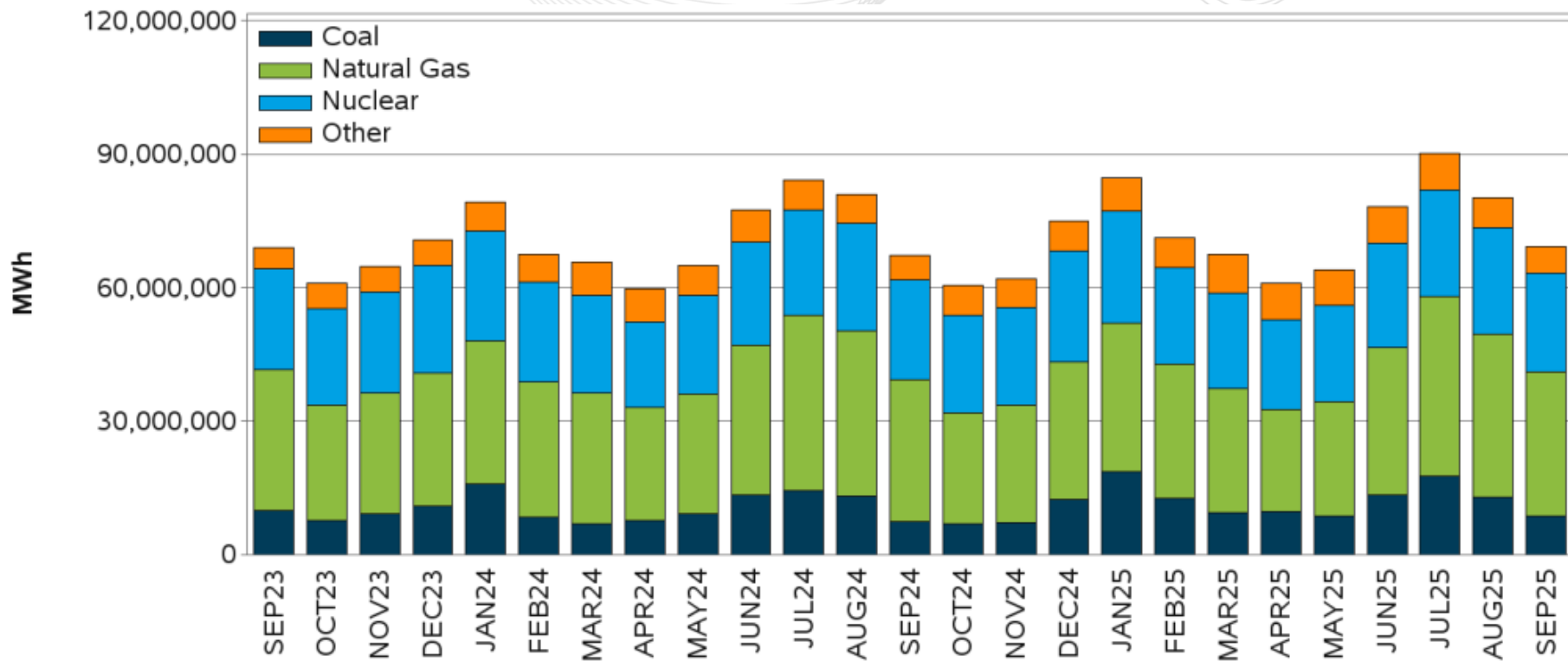


# Load Forecast Error - September Daily Peaks, 10:00 Forecast

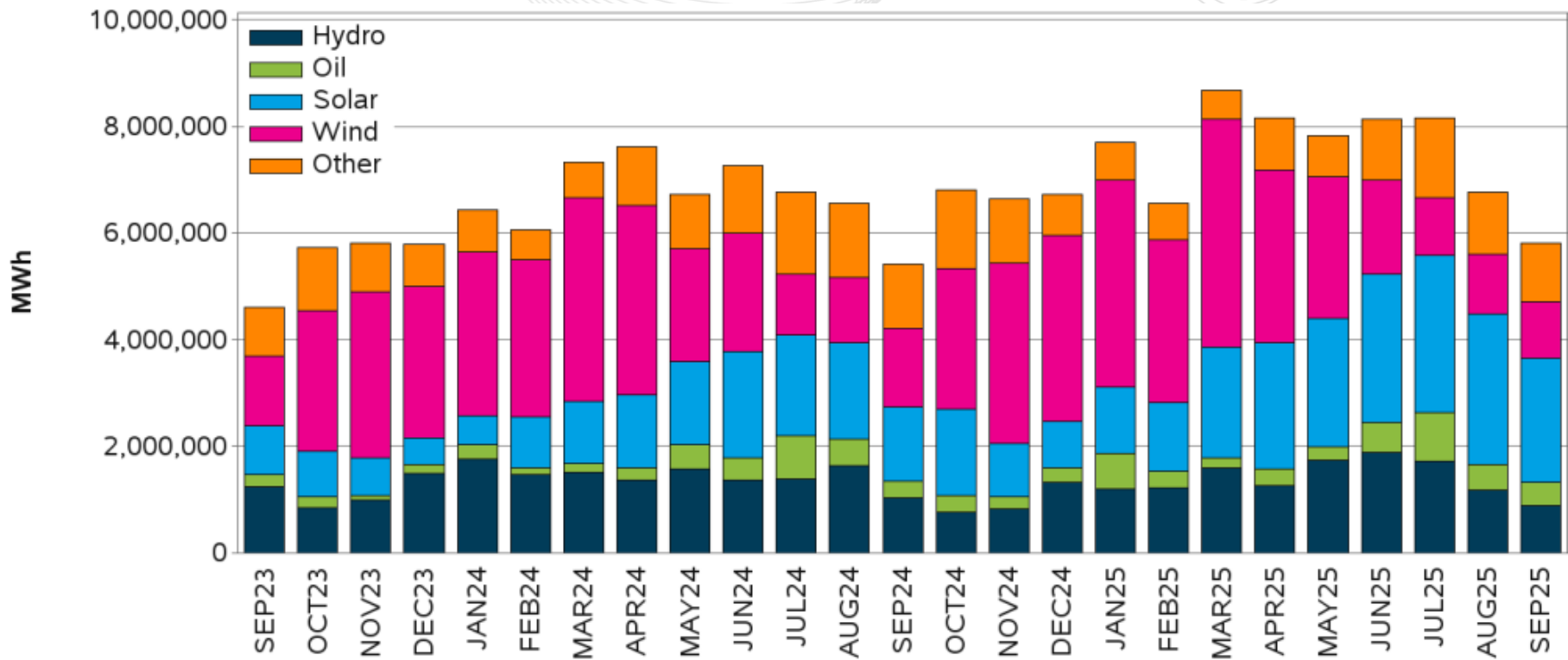


- PJM prepares a day-ahead load forecast at 10:00 am for use by our members.
- This forecast is not used to clear the day-ahead market and is not utilized for the reliability tools that run subsequent to the day-ahead market.

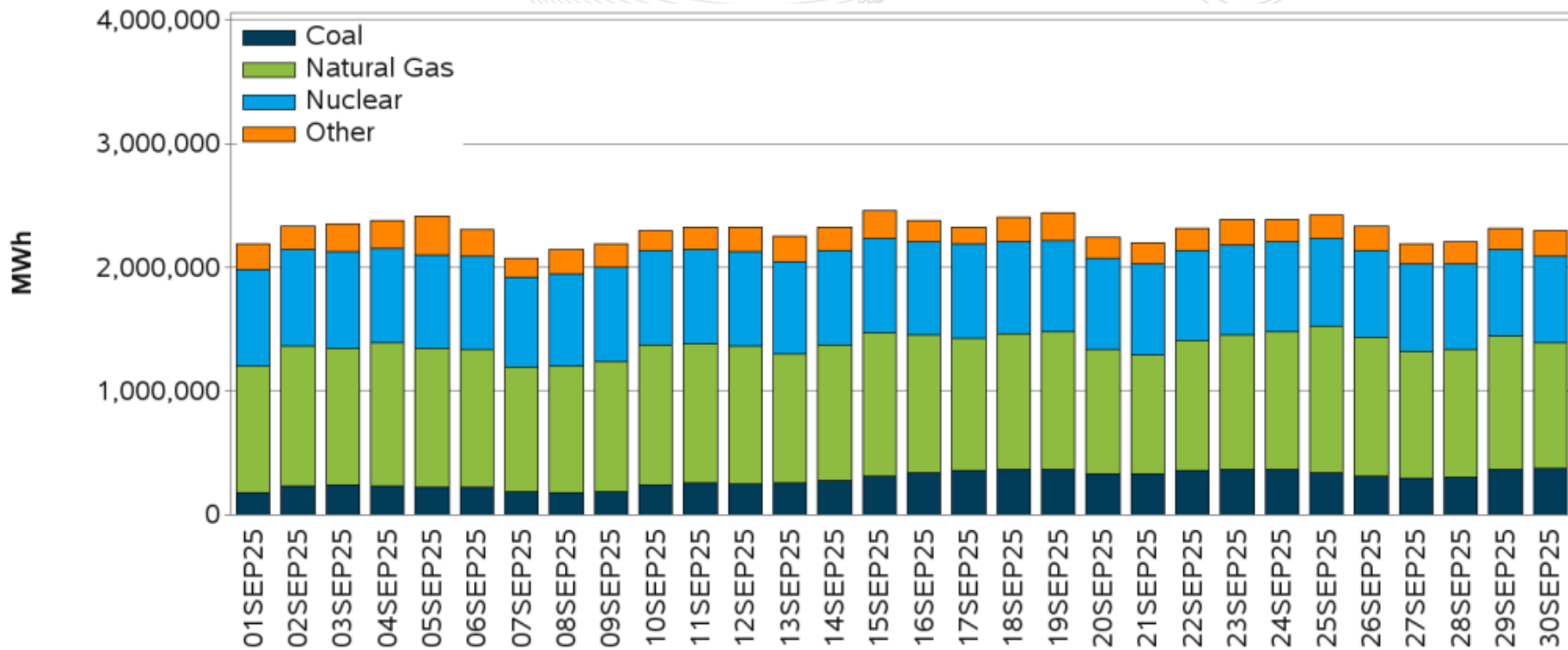
| Missed day: | Reason                                                                                                                           |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| 9/6/2025    | Several zones had excessive temperature error, coming in higher than forecasted, leading to much higher loads than               |
| 9/15/2025   | Load forecast models struggled with the weather volatility that occurs in September, leading to lower load and                   |
| 9/16/2025   | Temperature came in lower than forecast in the PJM zone, and the models struggled with the September volatility                  |
| 9/18/2025   | Excessively overforecasted temperature in the PJM zone led to load coming in much higher than anticipated in the RTO             |
| 9/26/2025   | Several zones had excessive temperature error, coming in much higher than forecasted, leading to much higher loads than          |
| 9/28/2025   | Temperature came in higher than forecasted in several zones, and the models struggled with the September volatility              |
| 9/29/2025   | Several zones had excessive temperature error, coming in much cooler than expected, resulting in lower loads and overforecasting |
| 9/30/2025   | Several zones had excessive temperature error, coming in much cooler than expected, resulting in lower loads and overforecasting |



'Other' includes Hydro, Oil, Solar, Wind, and Other

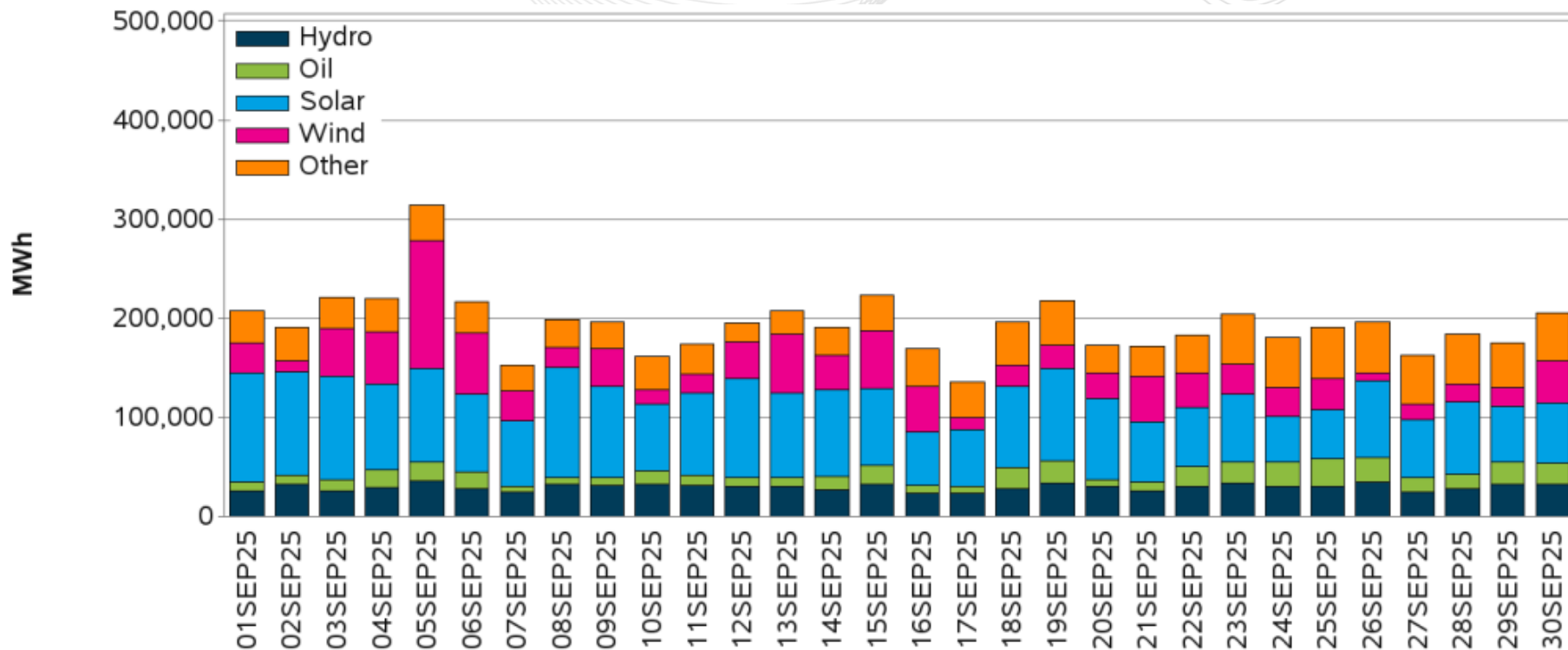


'Other' includes Flywheels, Multiple Fuels, Storage, and Other Renewables



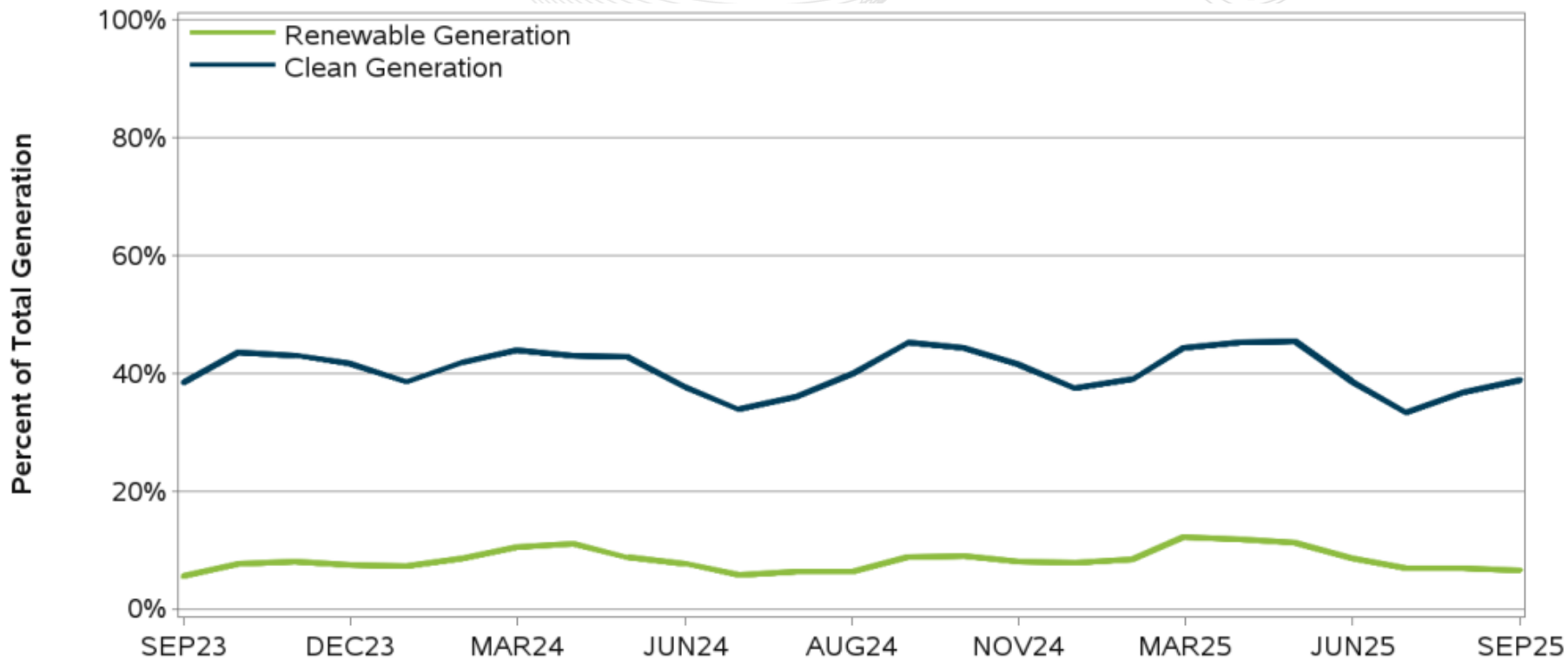
'Other' includes Hydro, Oil, Solar, Wind, and Other

# Daily Generation by Fuel, Other - September



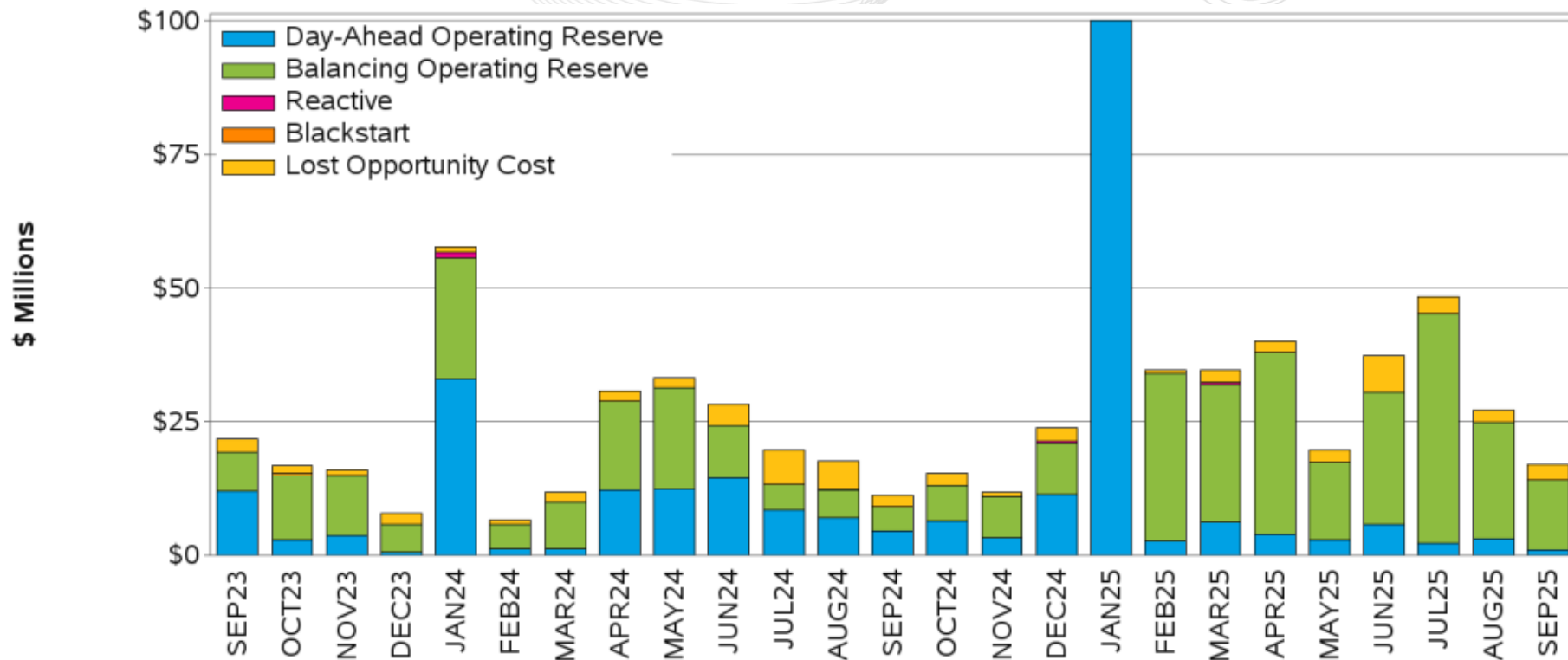
'Other' includes Flywheels, Multiple Fuels, Storage, and Other Renewables

# Percent of Renewable and Clean Generation

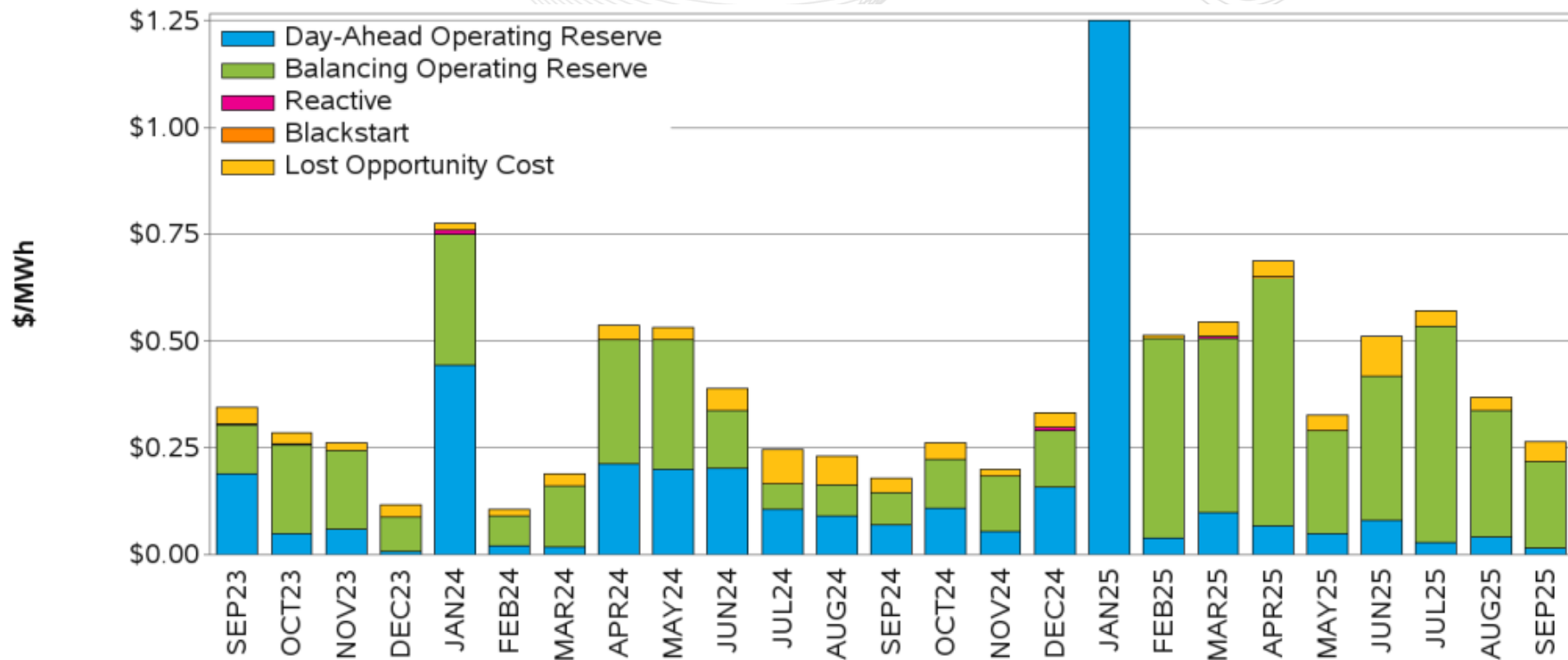


'Renewable' includes Wind, Solar, Hydro, and Other Renewables. 'Clean' includes Renewable and Nuclear.

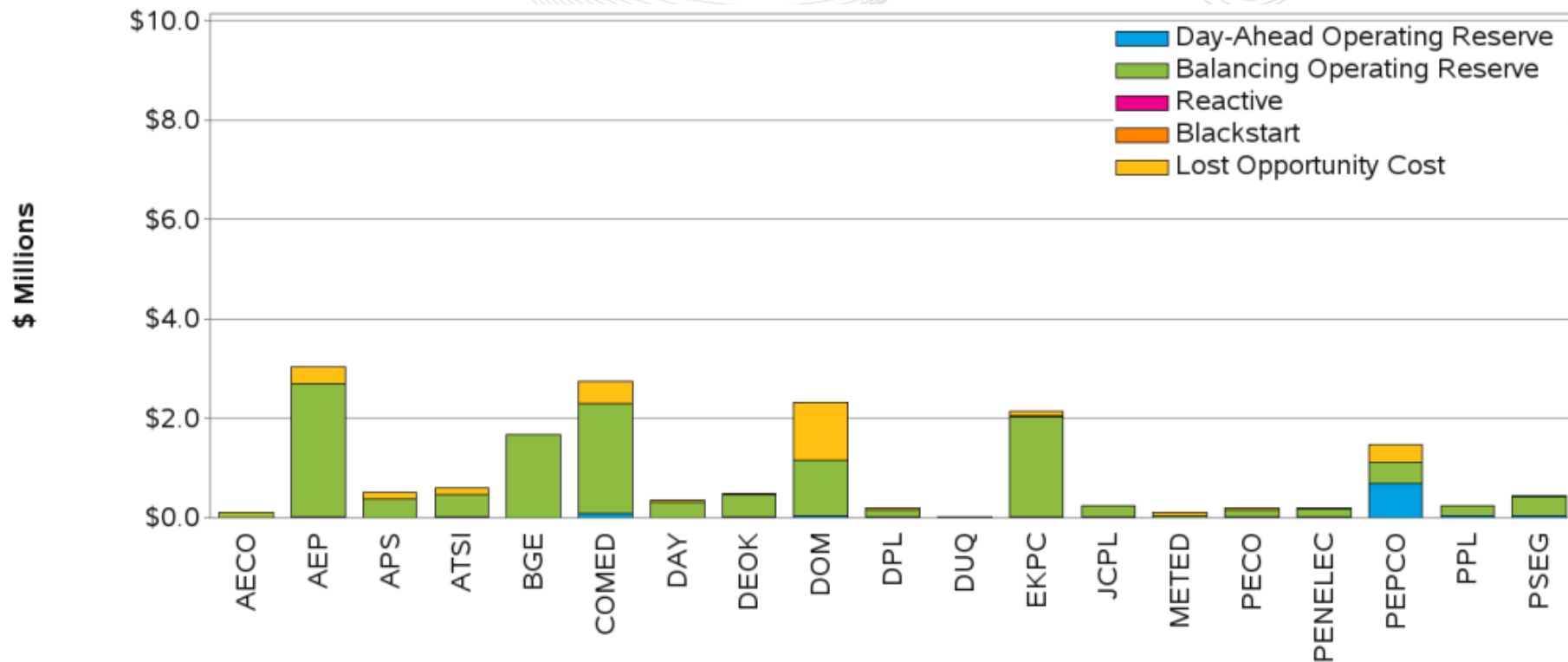
# Operating Reserve (Uplift)

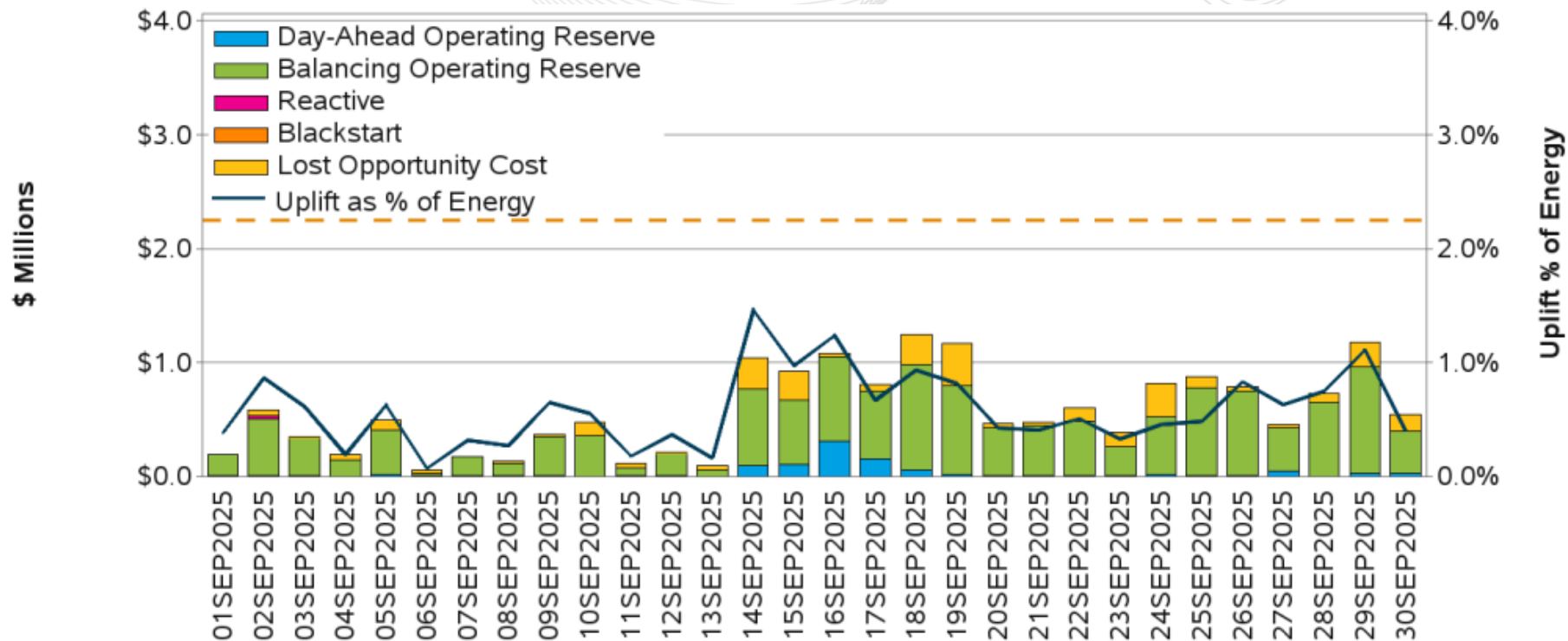


\*Uplift for January 2025 totaled nearly \$400M. Please see previous reports or the report appendix for the breakout of costs.



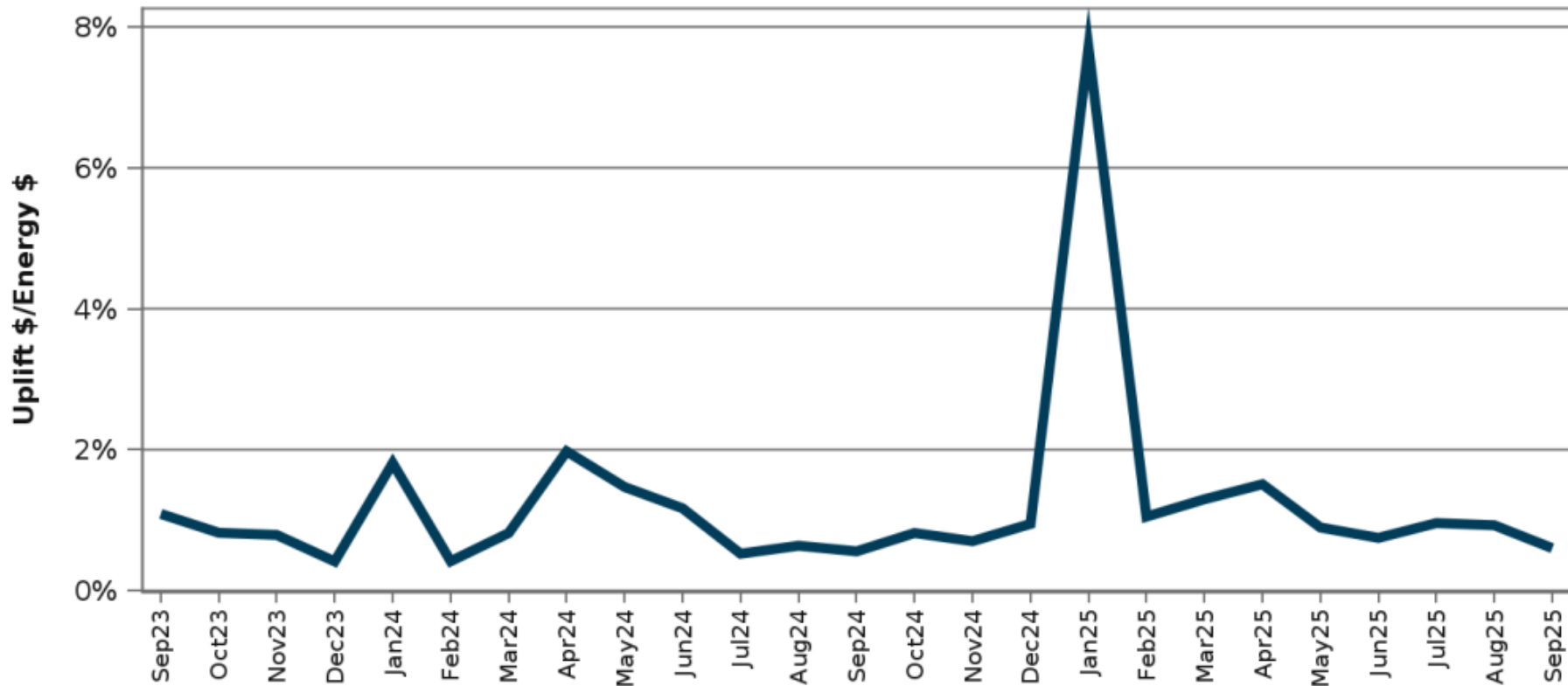
\*Uplift for January 2025 totaled nearly \$5/MWh. Please see previous reports or the report appendix for the breakout of costs.



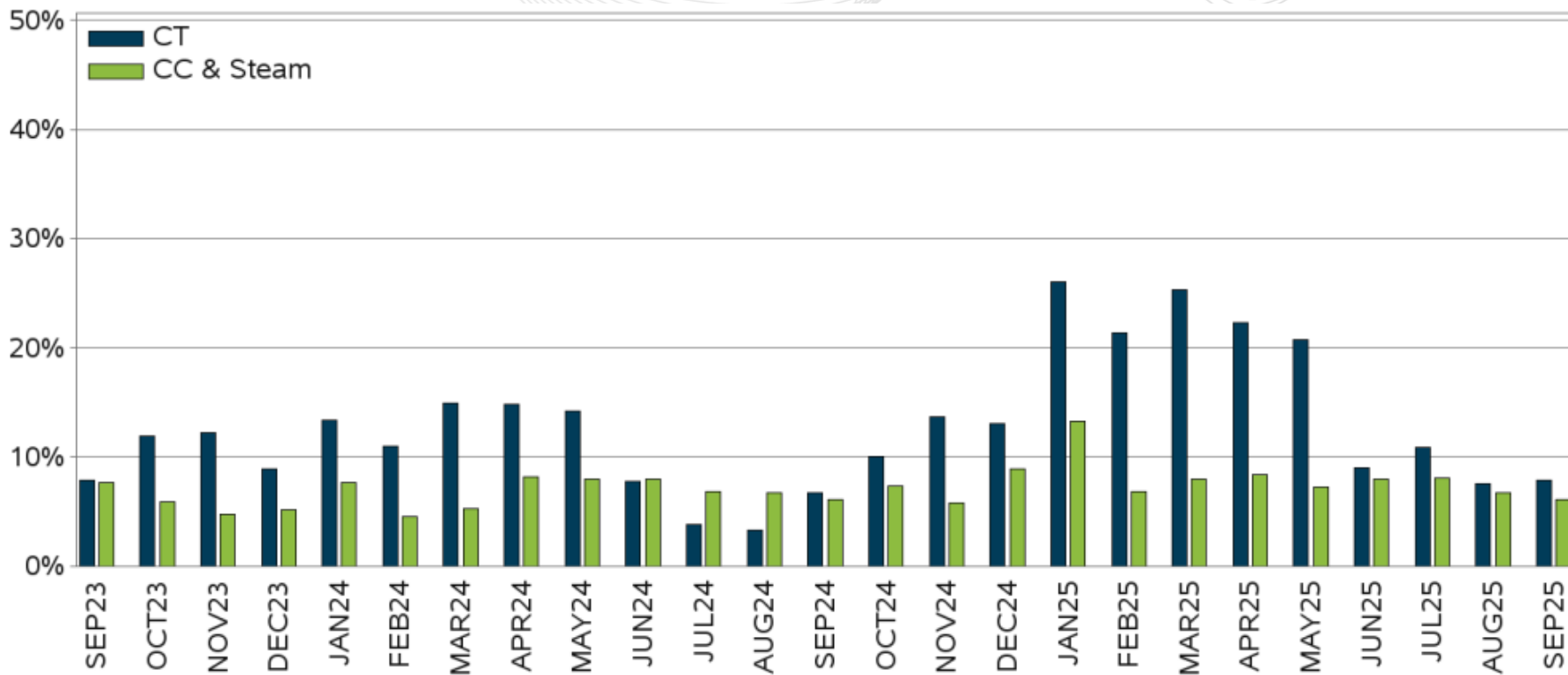


More information on Uplift can be found on the PJM website at [Drivers of Uplift](#)

## Monthly Uplift as a Percent of Energy Costs

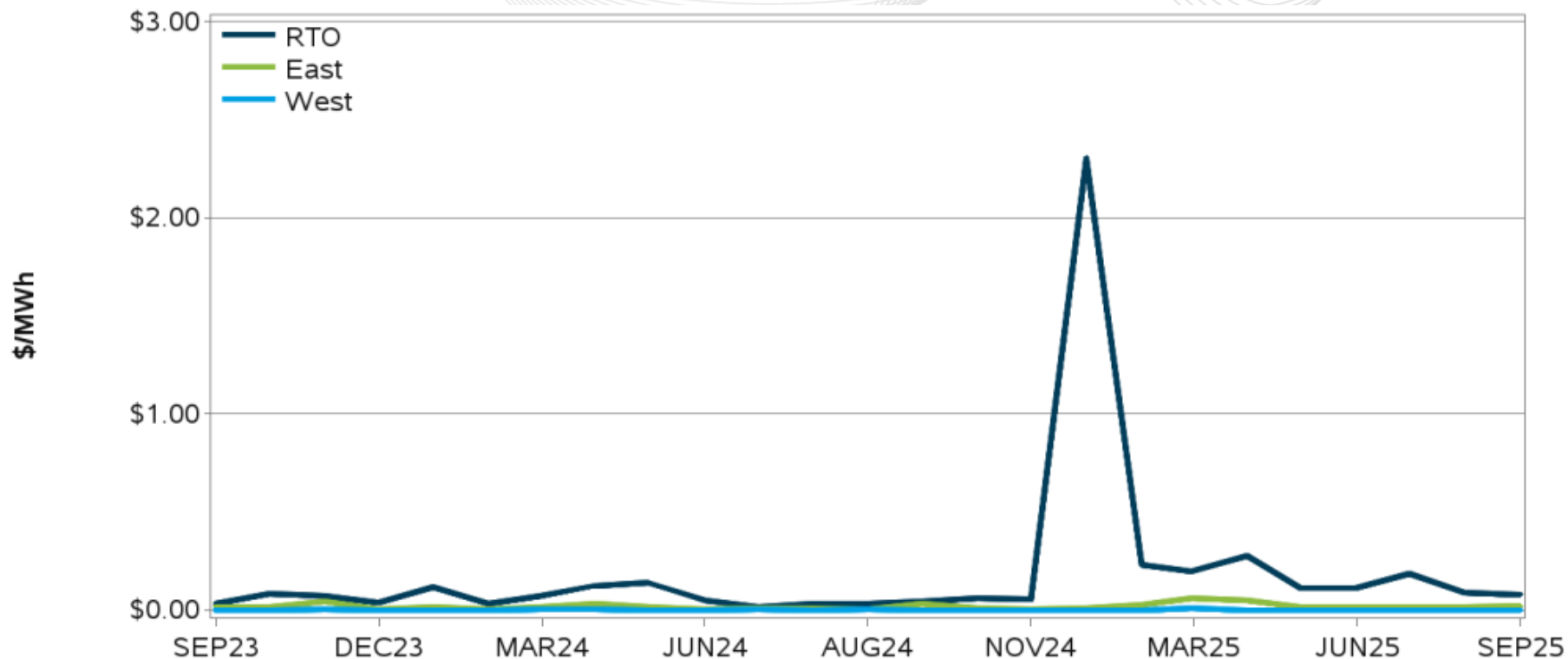


## Percent of Total CT, CC and Steam Hours with LMP < Offer

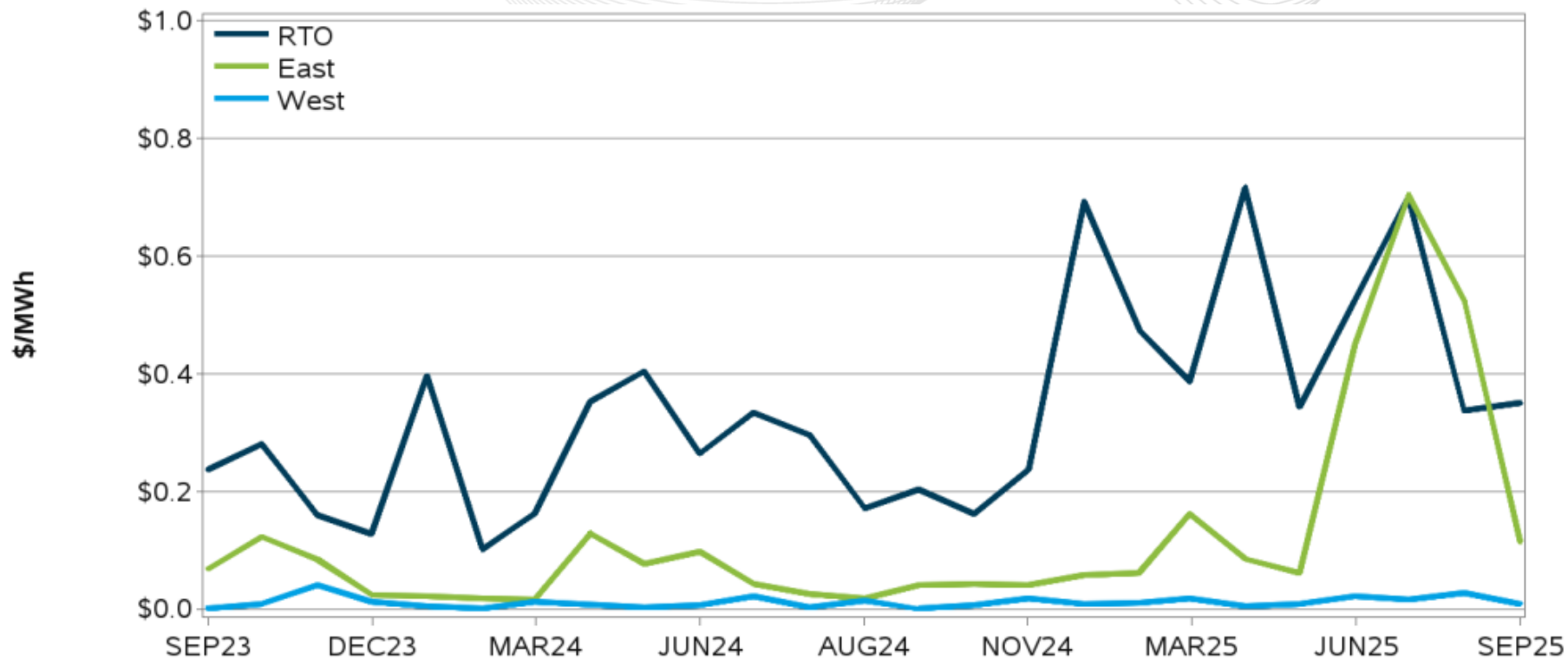


- Beginning in December 2008, the daily Balancing Operating Reserves (BOR) rate was replaced with six different BOR rates: RTO BOR for Reliability Rate, RTO BOR for Deviations Rate, East BOR for Reliability Rate, East BOR for Deviations Rate, West BOR for Reliability Rate, West BOR for Deviations Rate.
- Reliability rates are charged to all real-time load and exports, whereas deviation rates, as before, are charged only to real-time deviations. RTO rates are charged to the whole footprint, whereas East and West rate adders are charged based on location.

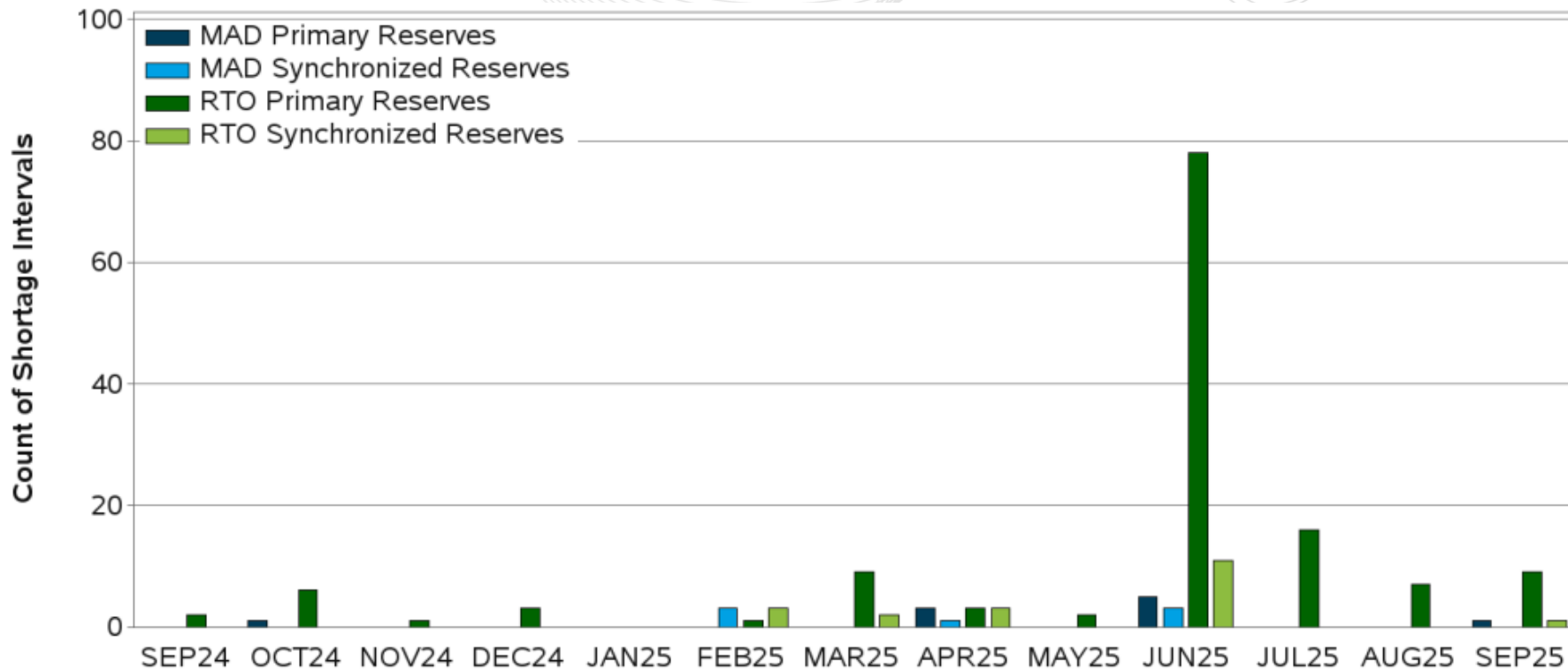
# Reliability Balancing Operating Reserve Rates



# Deviations Balancing Operating Reserve Rates

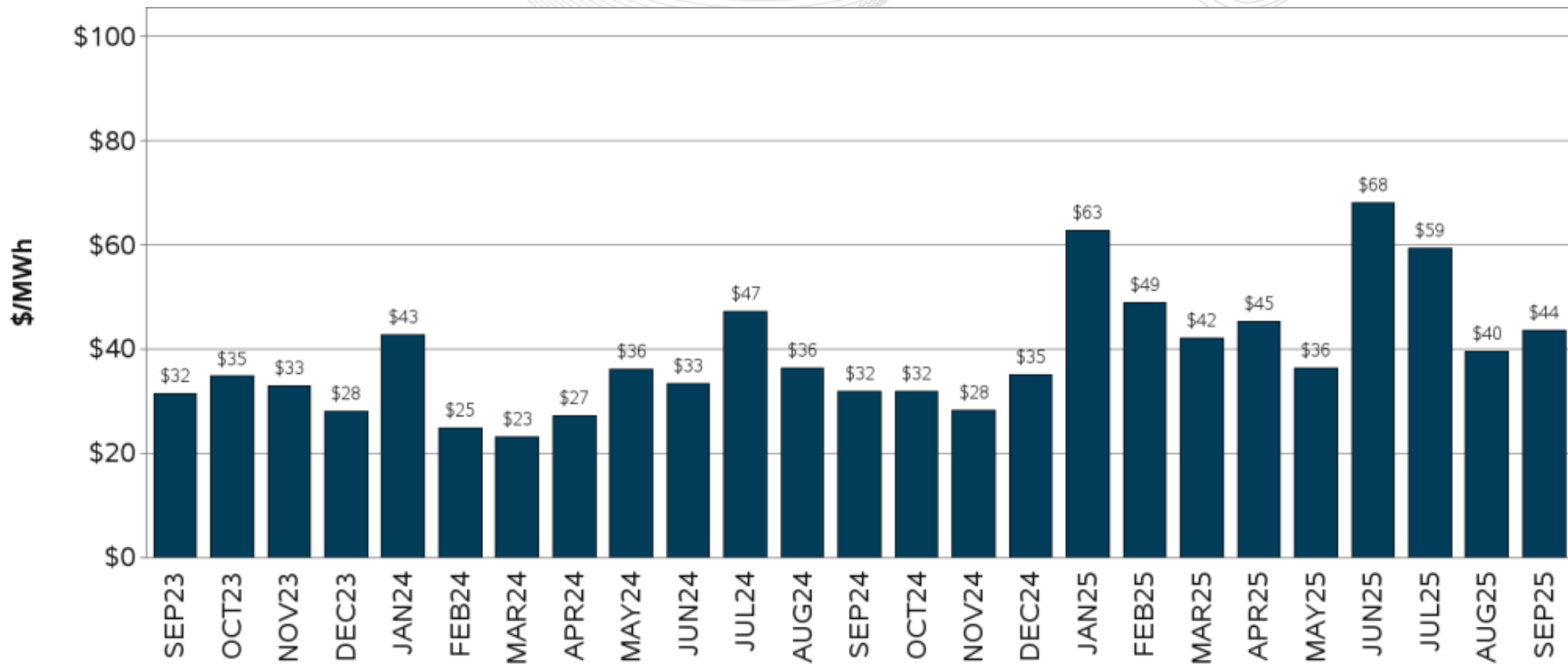


# Energy Market LMP Summary

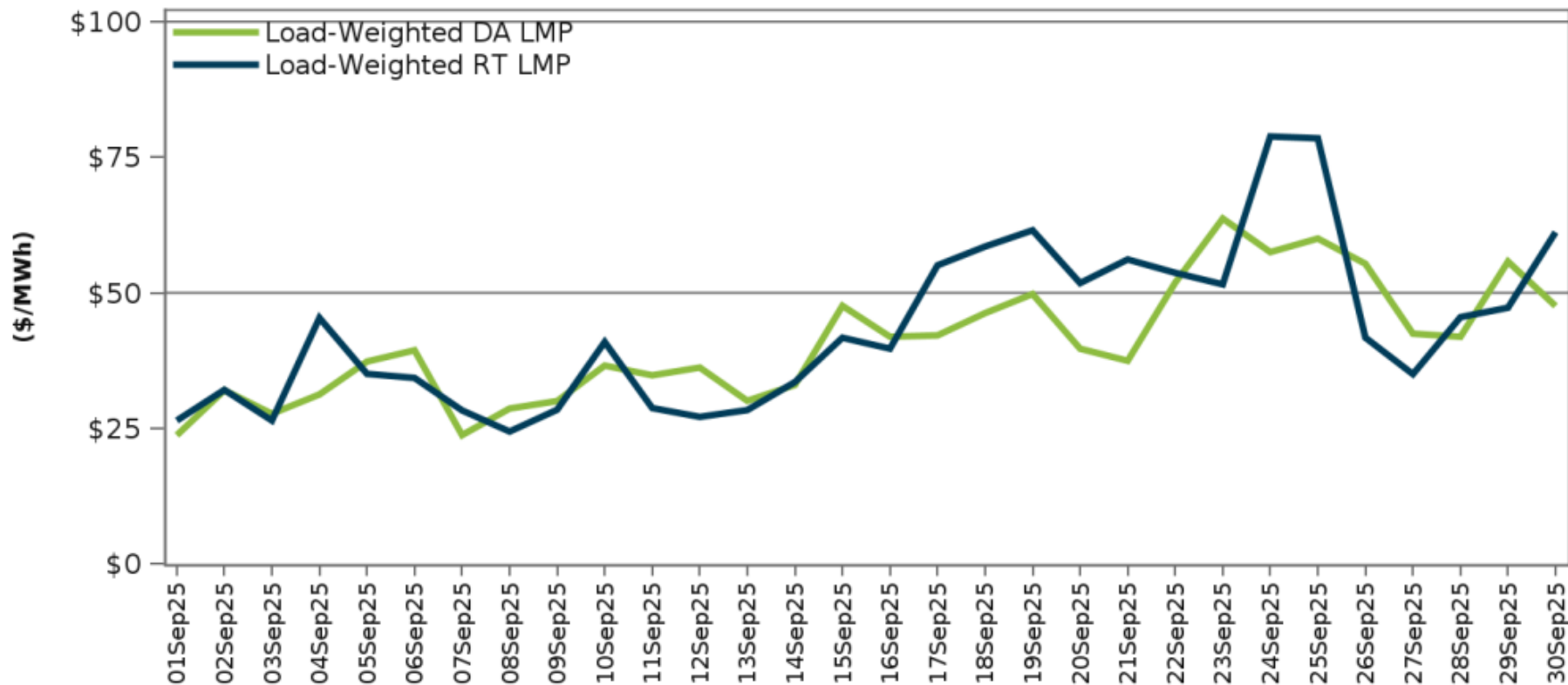


[Information on constraints and shadow prices can be found here](#)

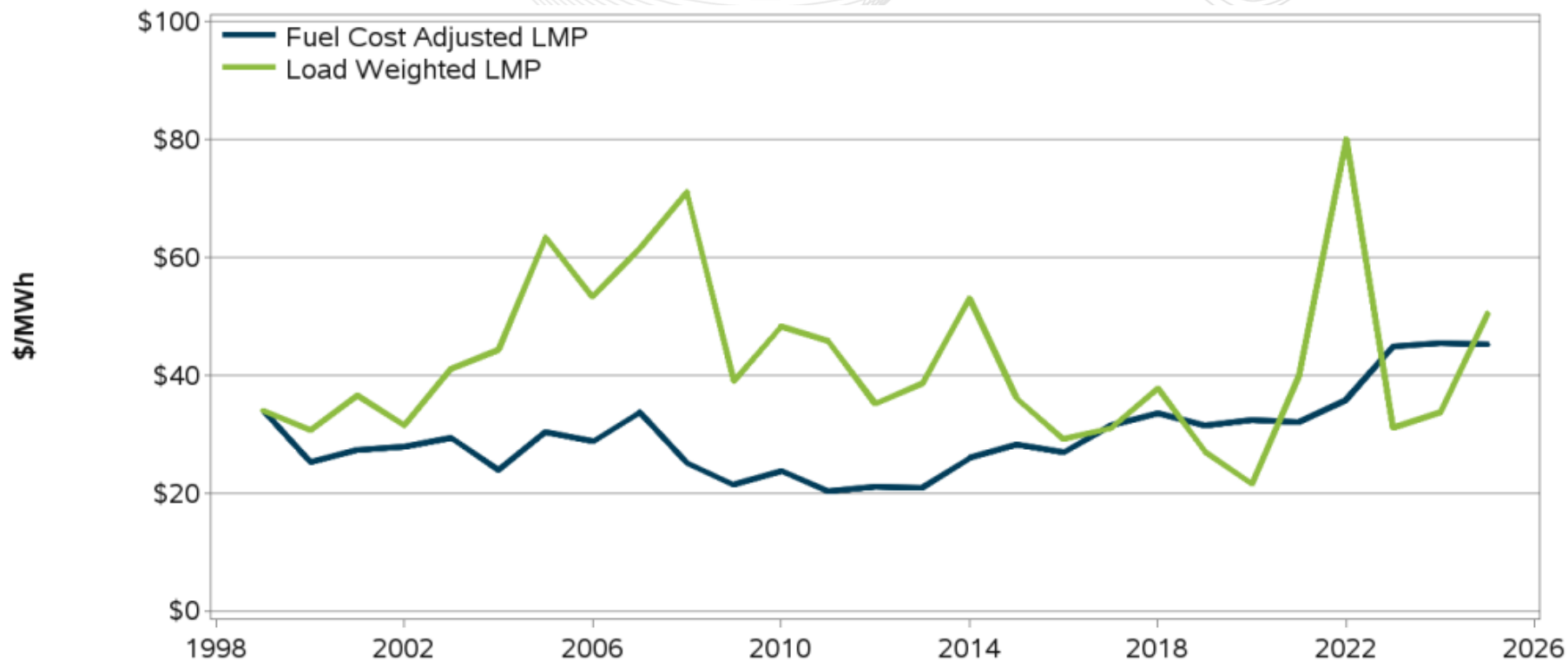
# Monthly Load-Weighted Average Real-time LMP

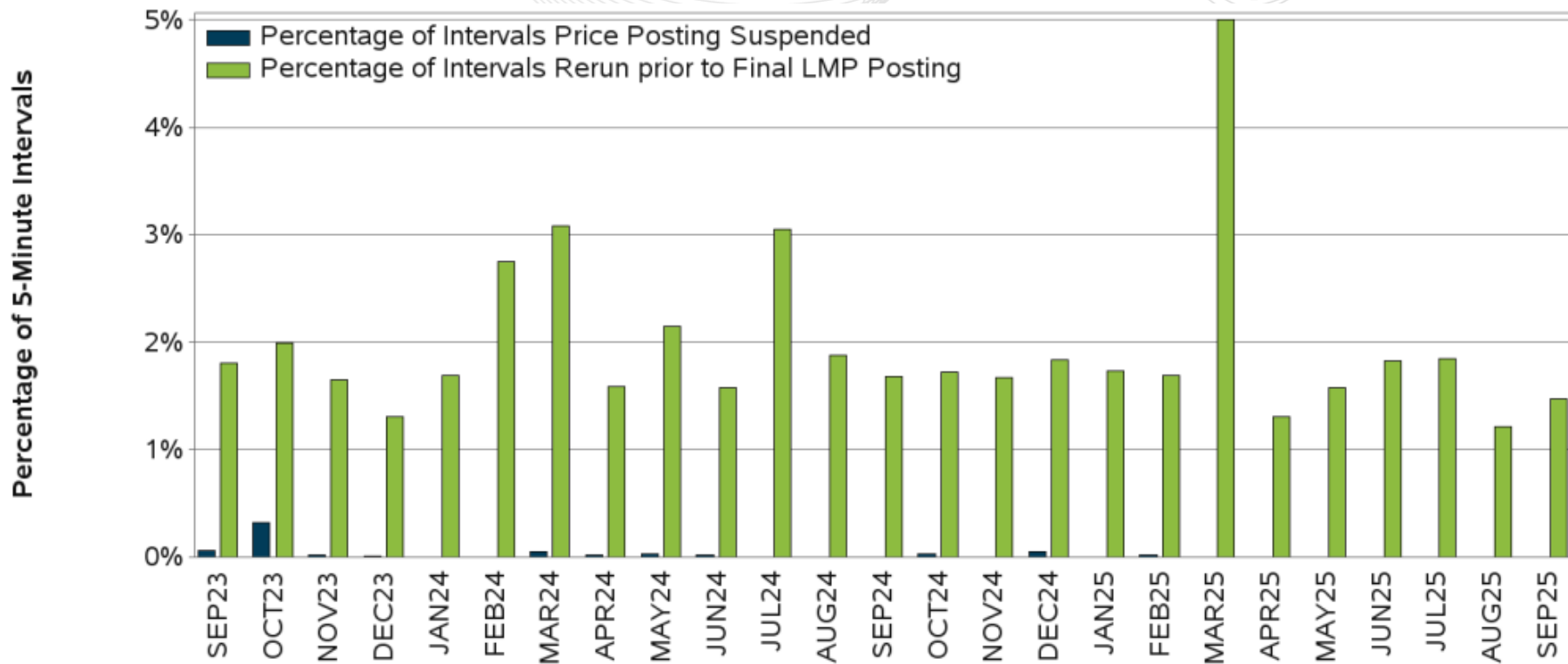


# Daily Load-Weighted Average DA & RT LMP



# Fuel Cost Adjusted LMP (Referenced to 1999 Fuel Prices)

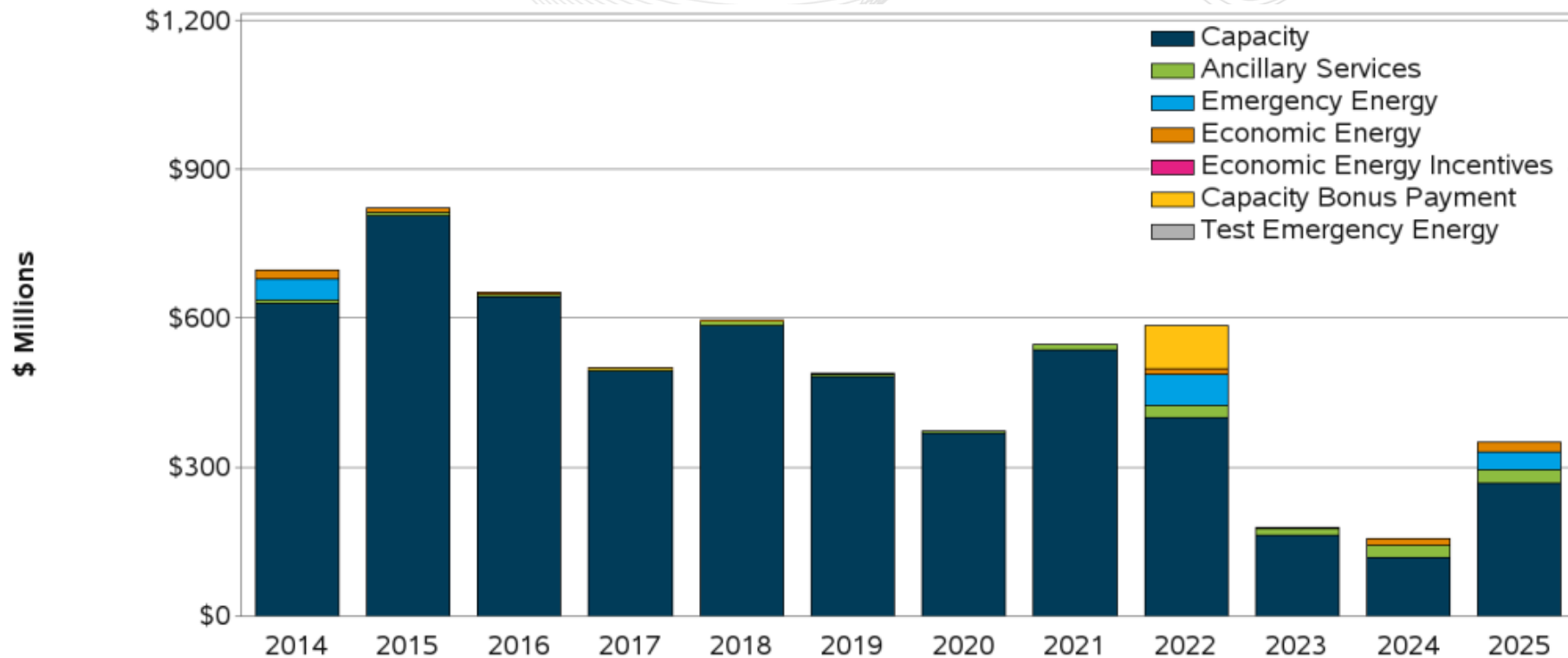


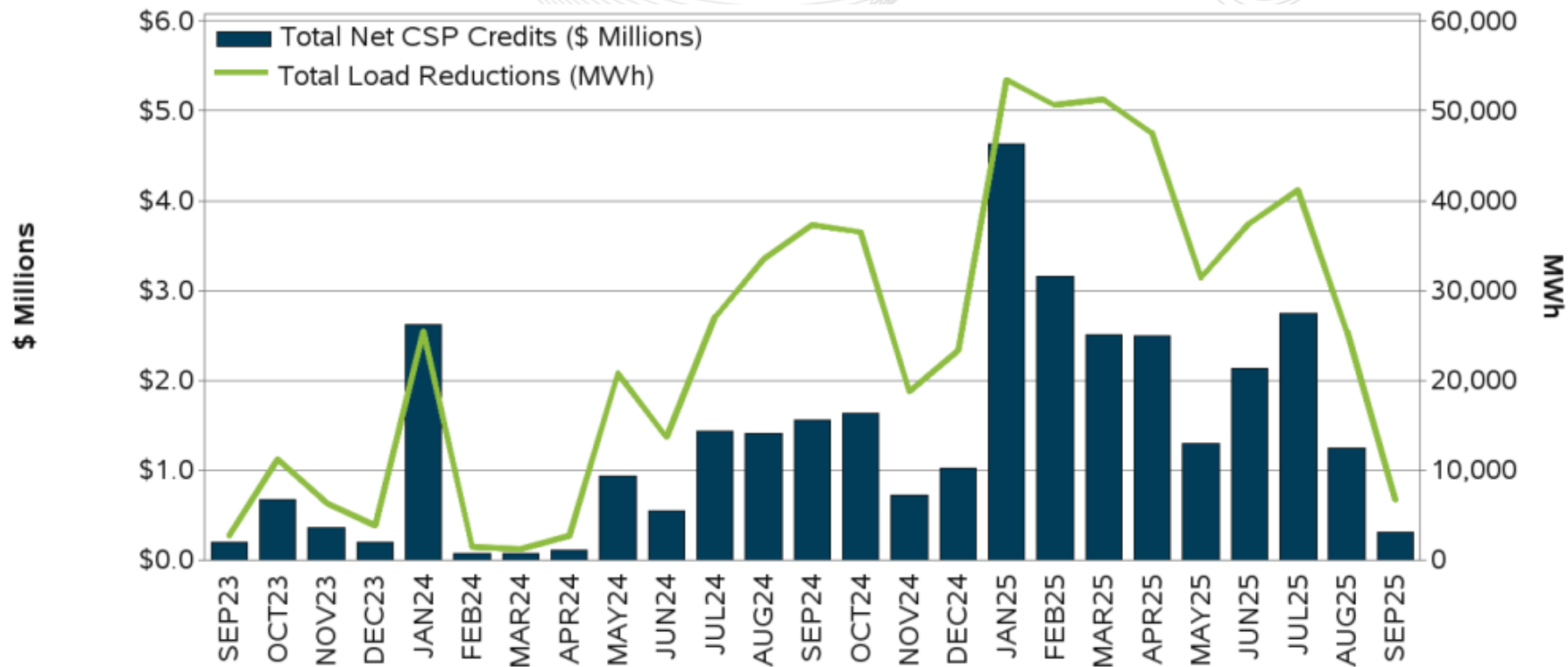


# Energy Market

## Demand Response Summary

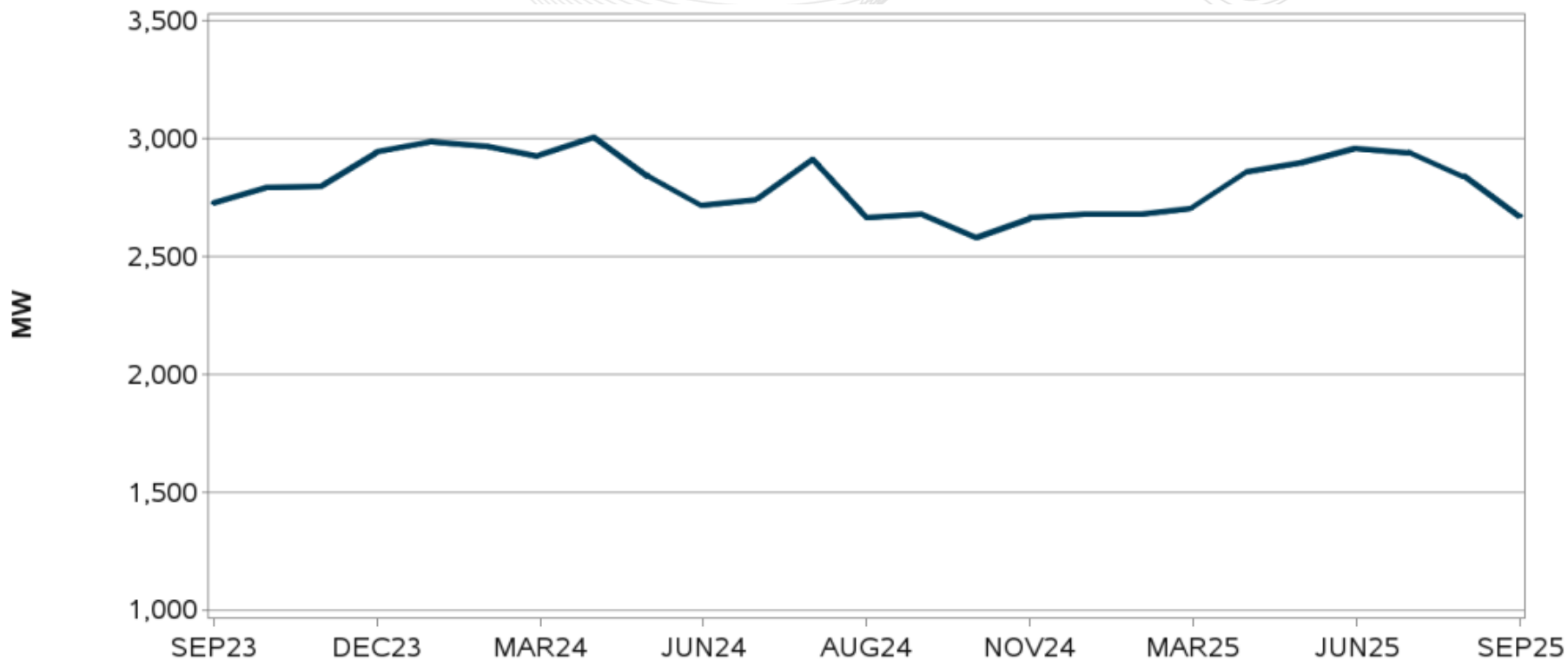
# Demand Side Response Estimated Revenue





\*Data for the last few months are subject to significant change due to the settlement window.

# Total Registered MW in PJM's Economic Demand Response

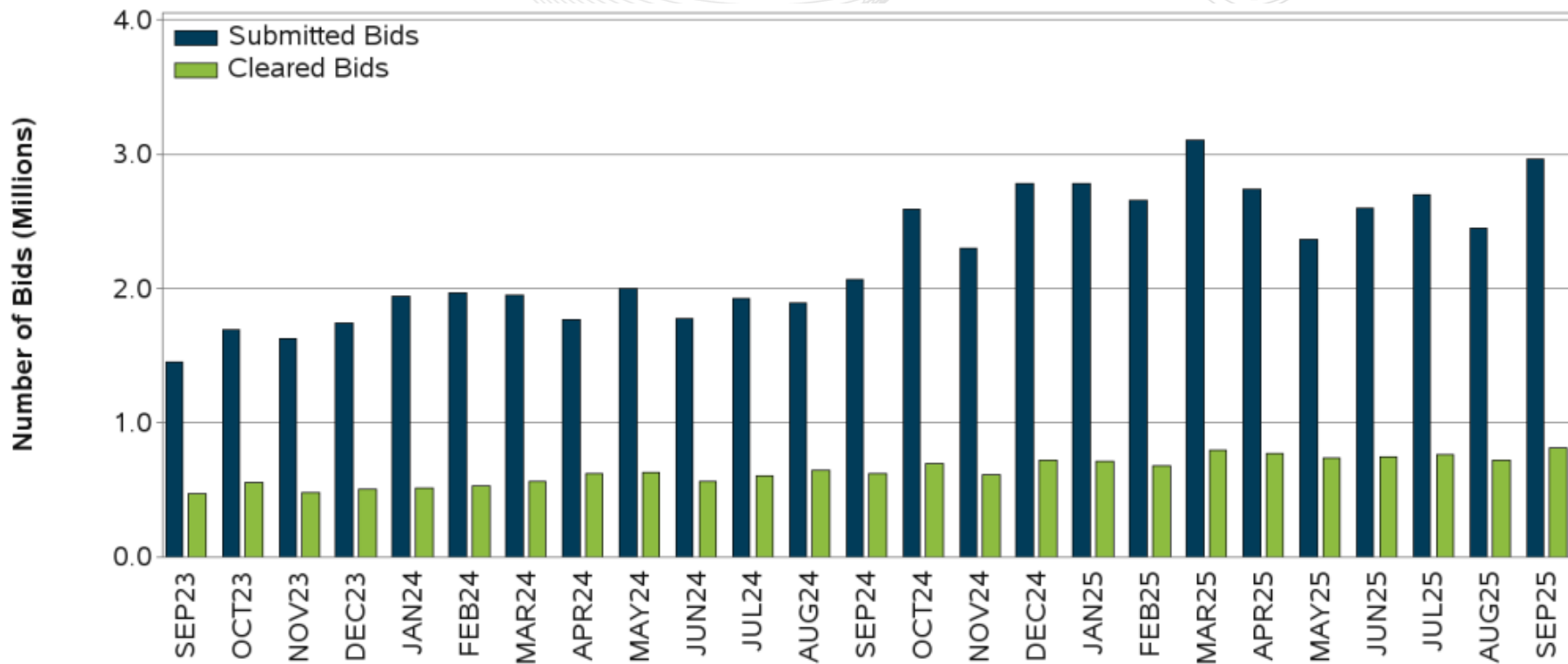


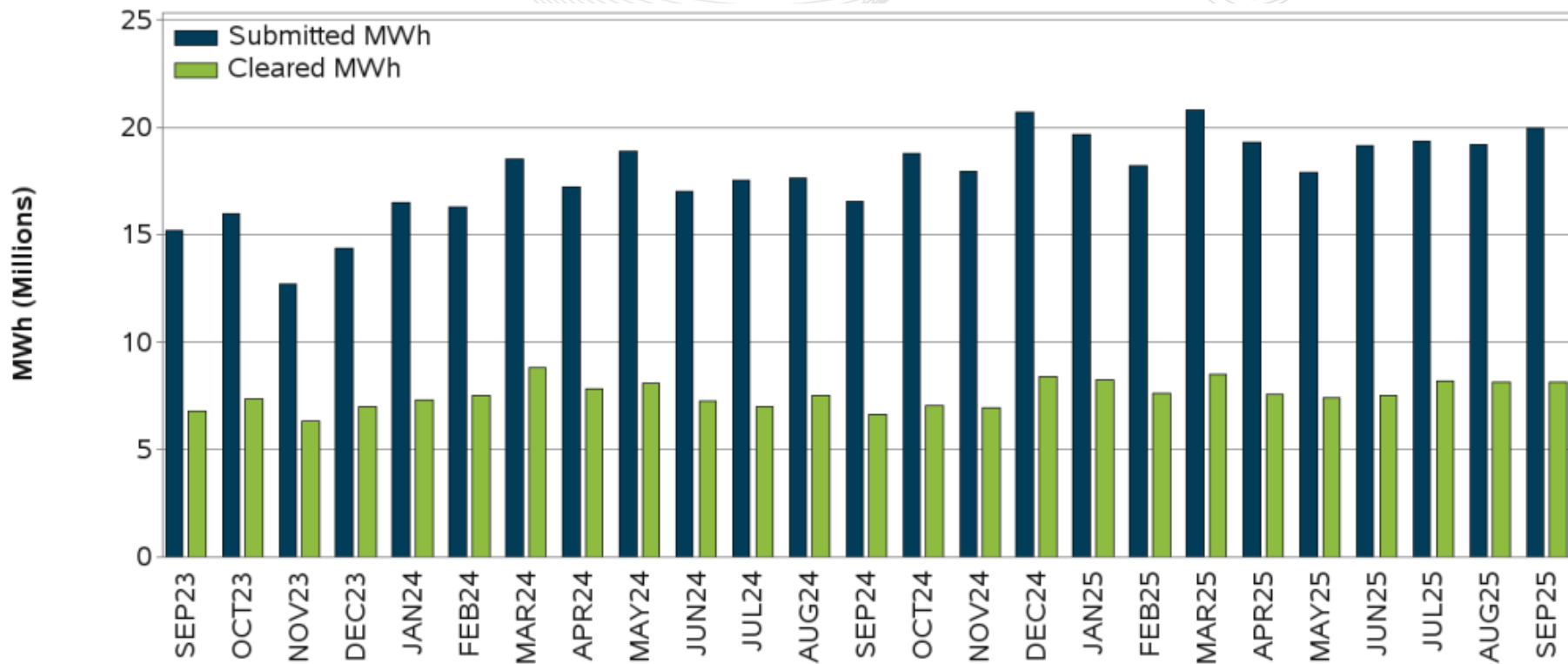
# Energy Market

## Virtual Activity Summary

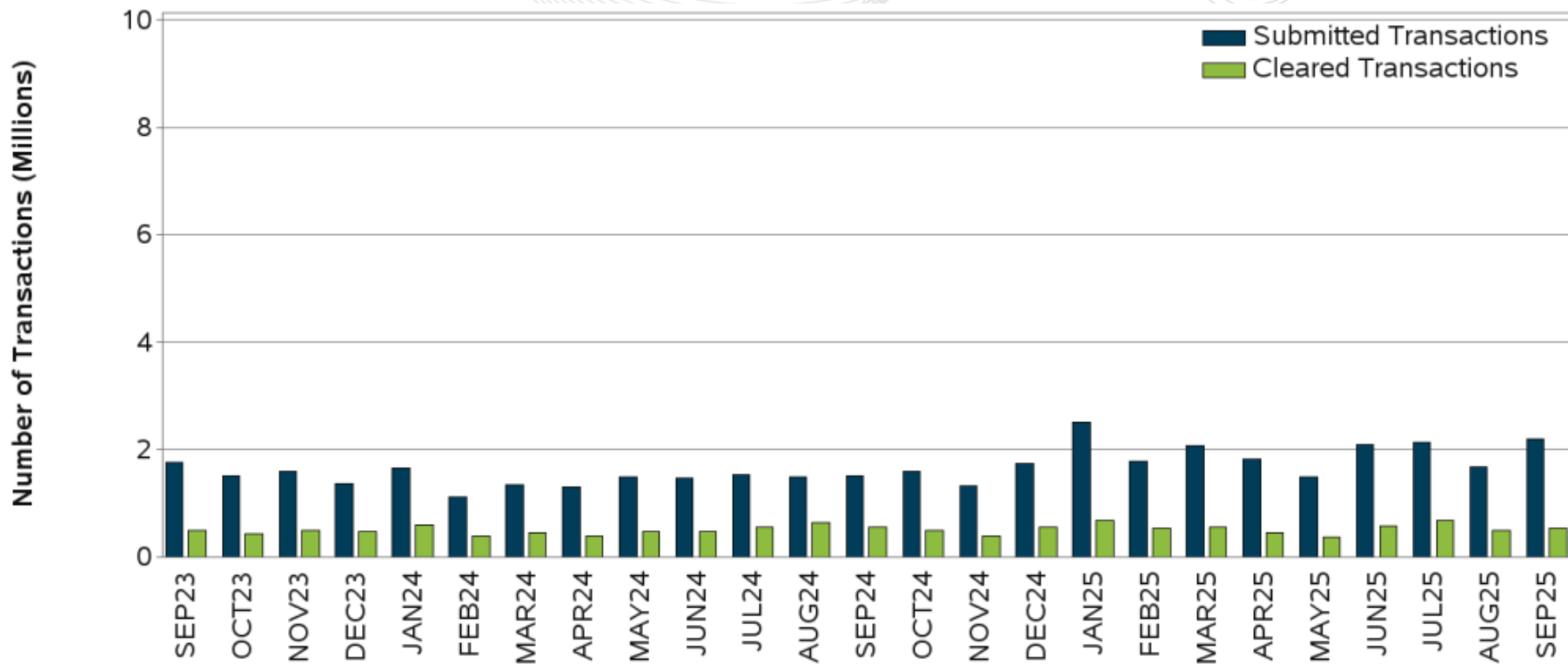
- The following six charts depict trends in submitted and cleared virtual and up-to-congestion transactions, in terms of number and volume, into the PJM Energy Market. The first two of these charts show the submitted and cleared increment and decrement bids (virtual transactions or virtuals) and they are the same as what was previously being presented in this report. The two charts after them display the trends in submitted and cleared up-to-congestion transactions into the PJM Energy Market. The last two of these six charts combine the virtual and up-to-congestion transactions and show the sum of these two categories.
- To clarify what a bid or transaction is, please consider the following example: An offer (increment, decrement or up-to-congestion) of 10 MW, valid for eight hours for a given day, is captured in the charts as eight submitted bids/transactions and 80 submitted MWh. If this offer fully clears for three of the hours it was submitted for, it shows in the charts as three cleared bids/transactions and 30 cleared MWh.

## Virtual Bids (INCs & DEC) - Total Number

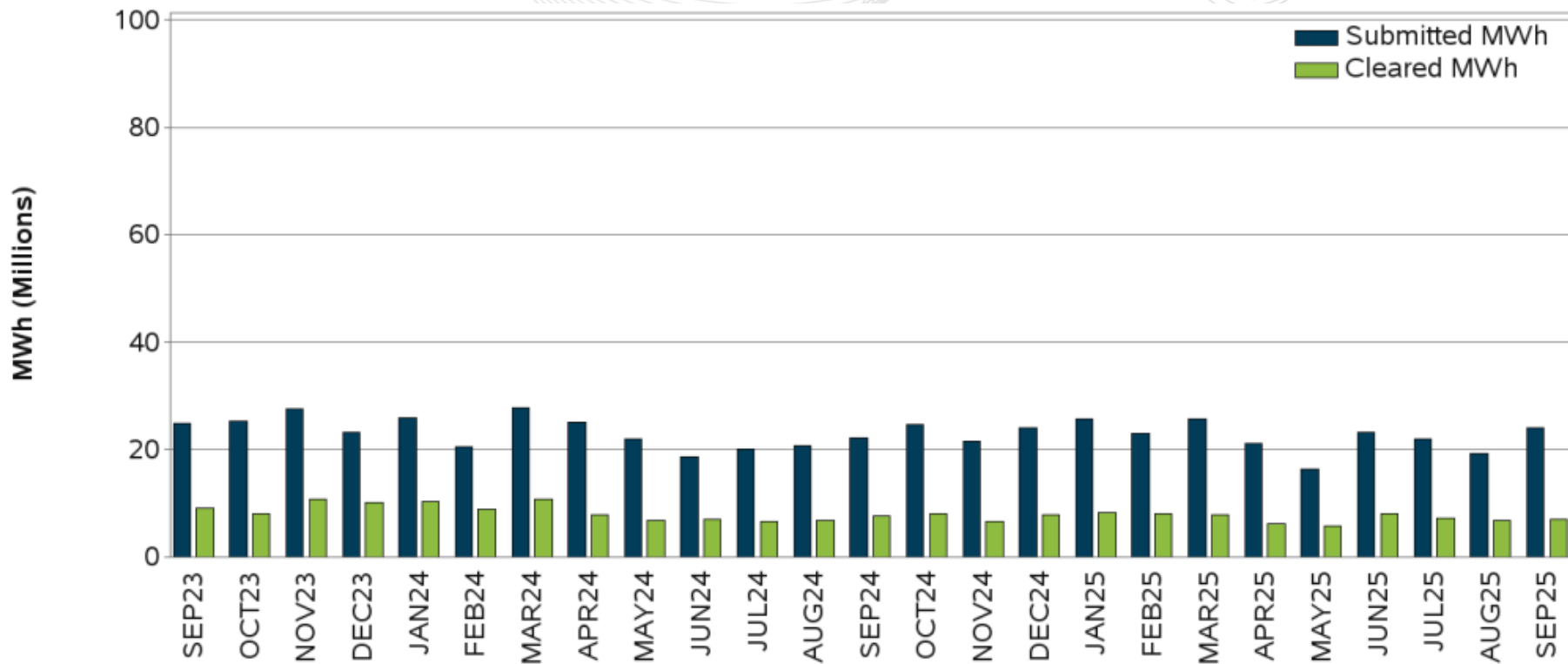




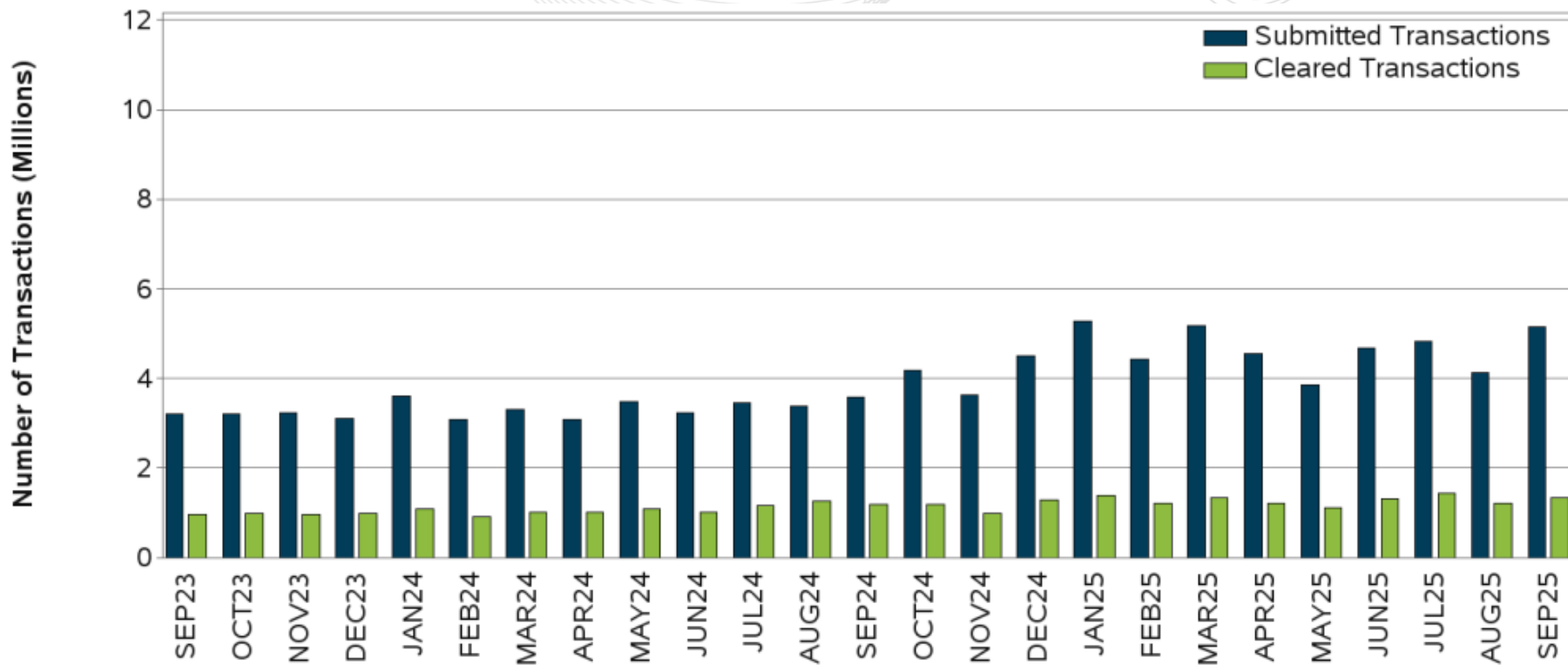
# Up-To-Congestion Transactions - Total Number



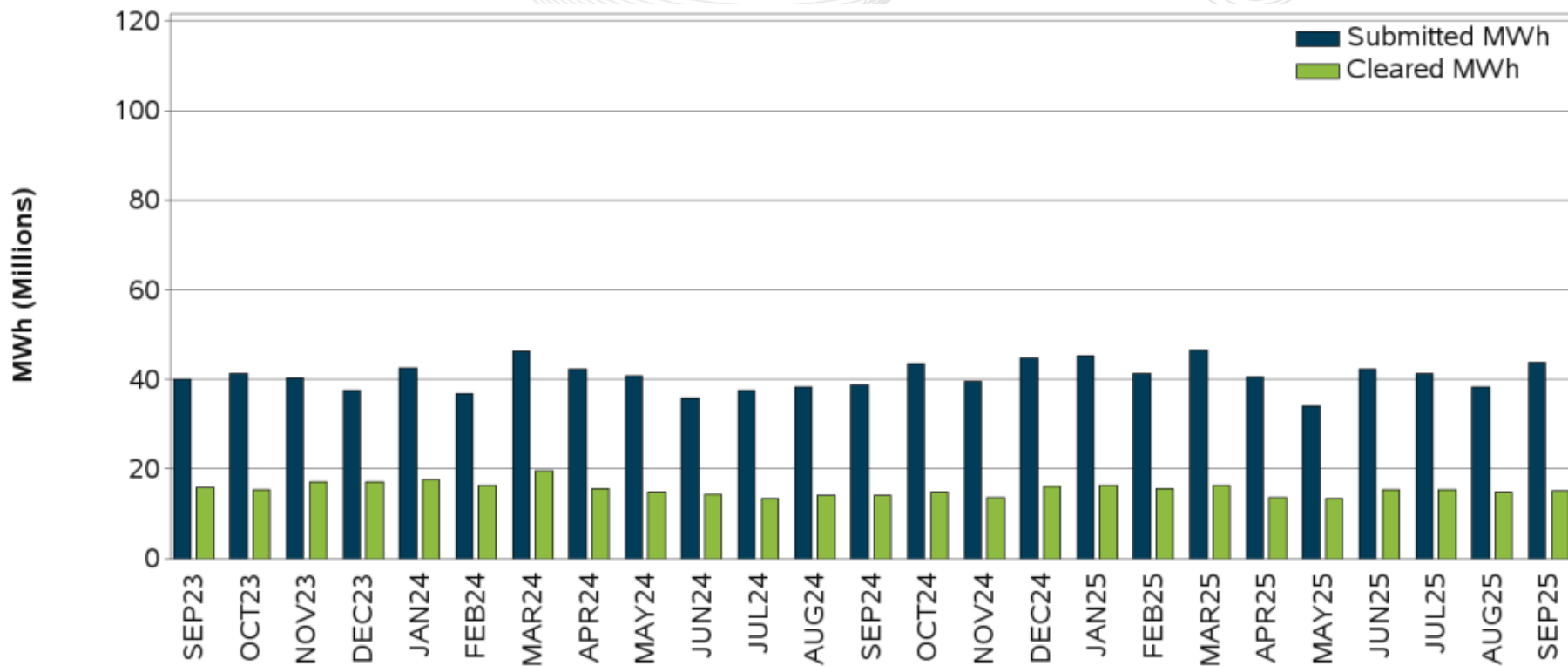
# Up-To-Congestion Transactions - Total Volume



# INCs, DECs and Up-To-Congestion Transactions - Total Number



# INCs, DEC and Up-To-Congestion Transactions - Total Volume

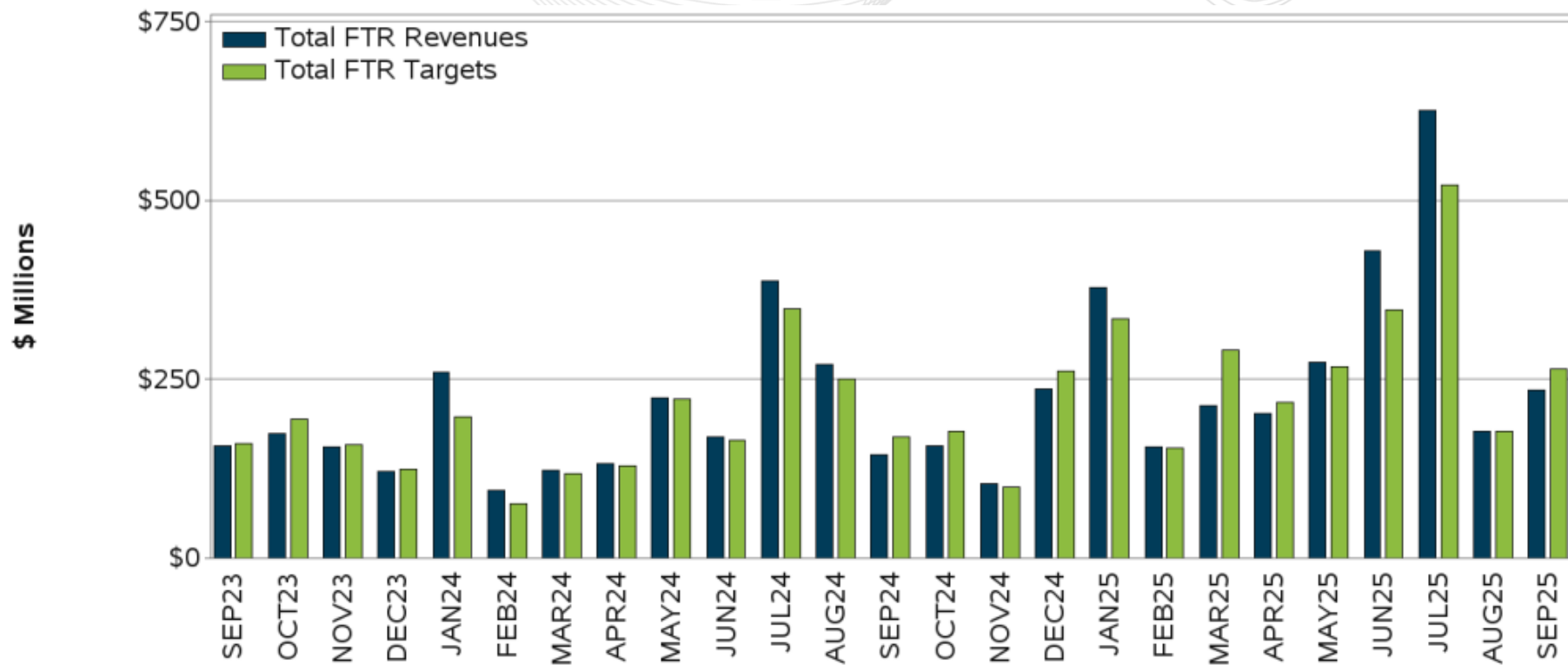


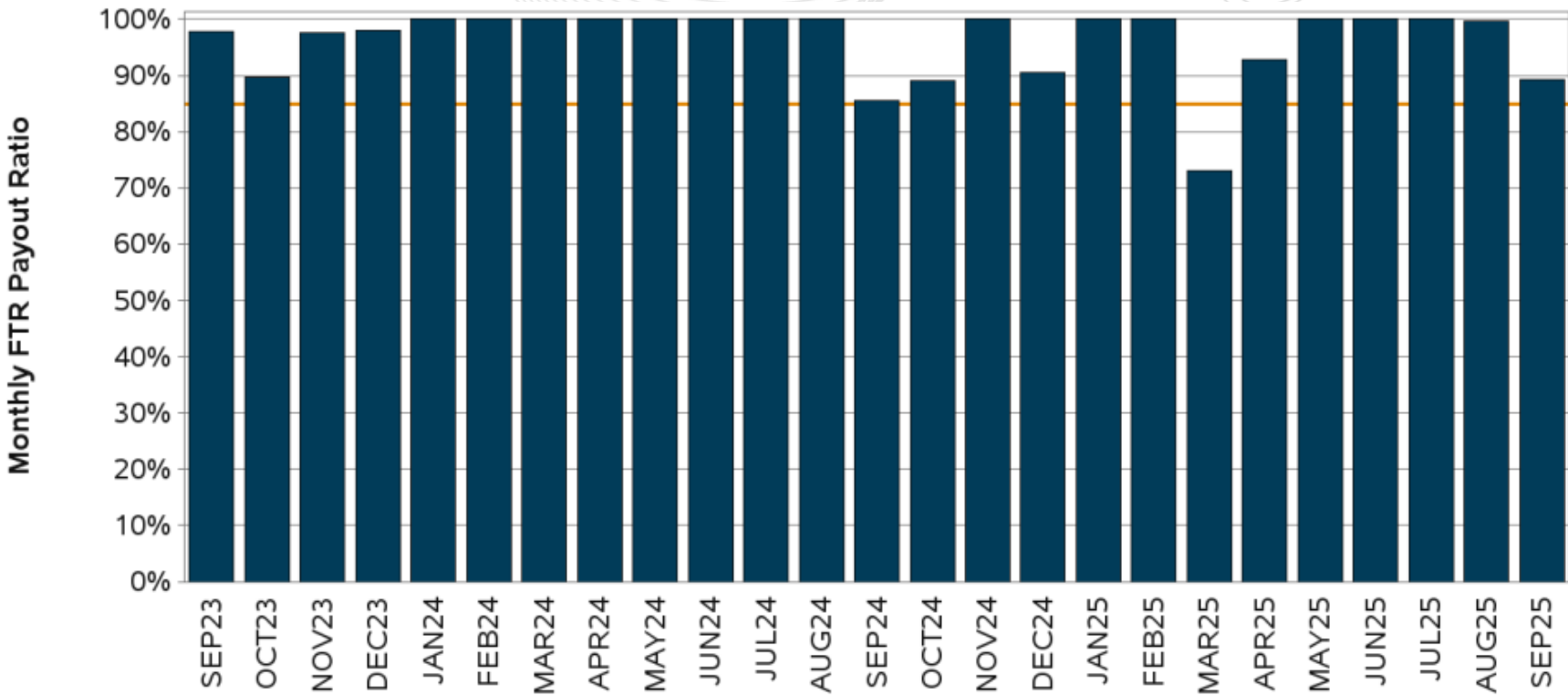
# Energy Market

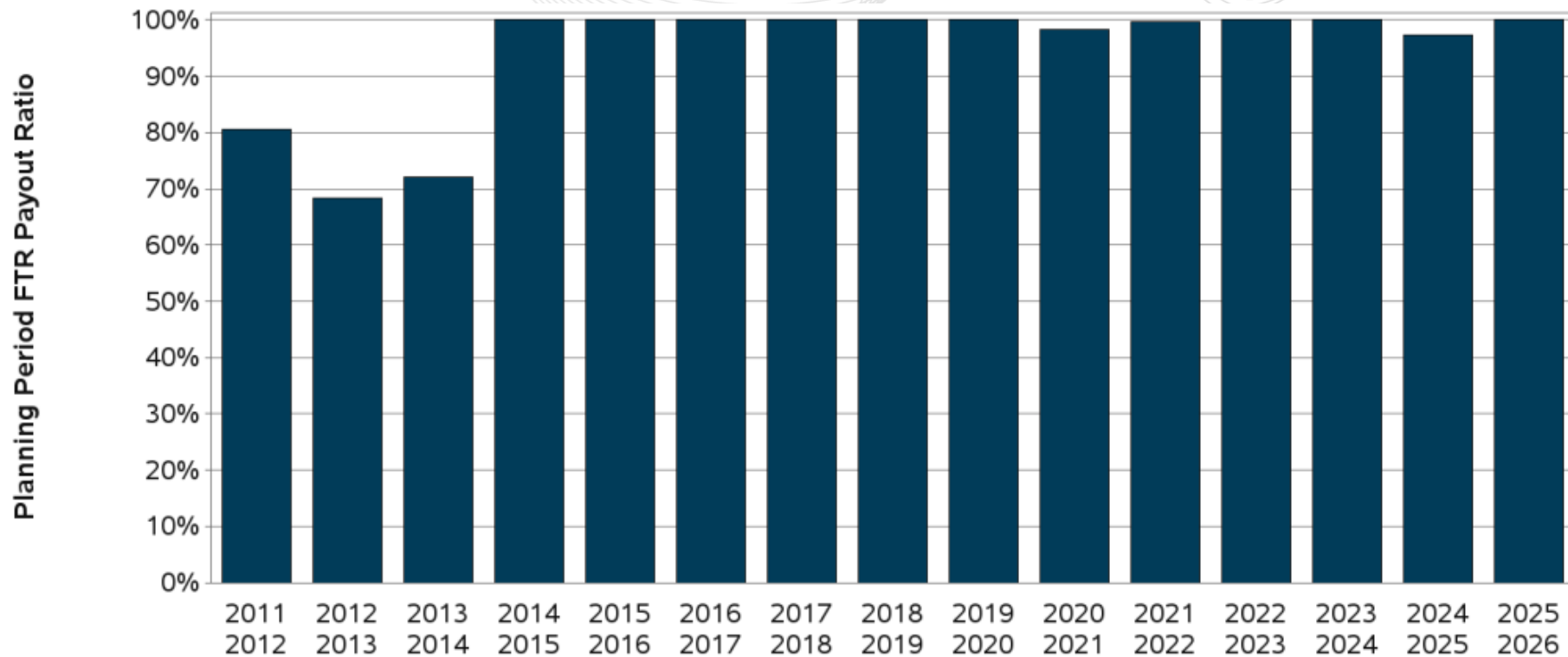
## Congestion and FTR Summary

| Period         | Surplus / Underfunding | Payout Ratio |
|----------------|------------------------|--------------|
| September 2025 | \$-28,473,967          | 89%          |
| 2025           | \$101,644,148          | 100%         |
| 2025/2026      | \$152,352,202          | 100%         |

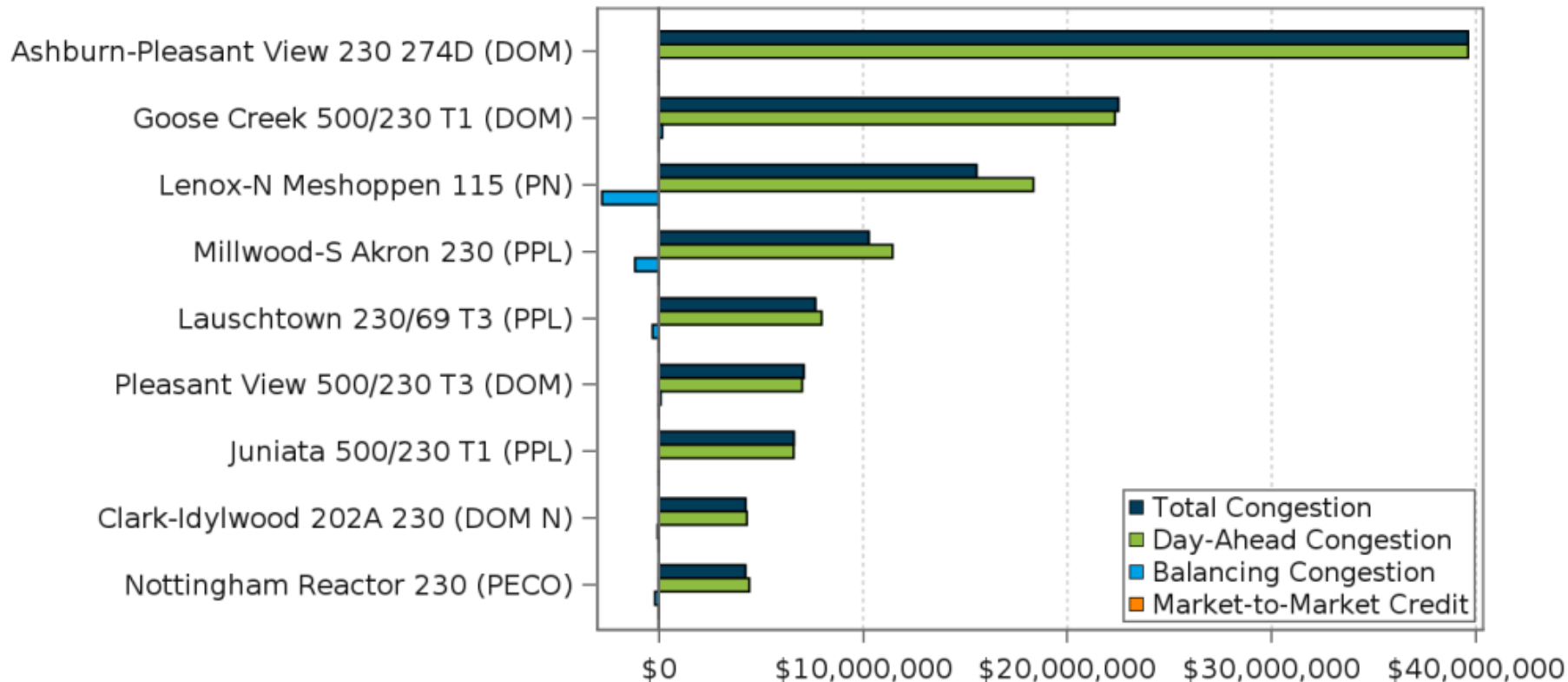
# FTR Revenue vs. FTR Target Allocation





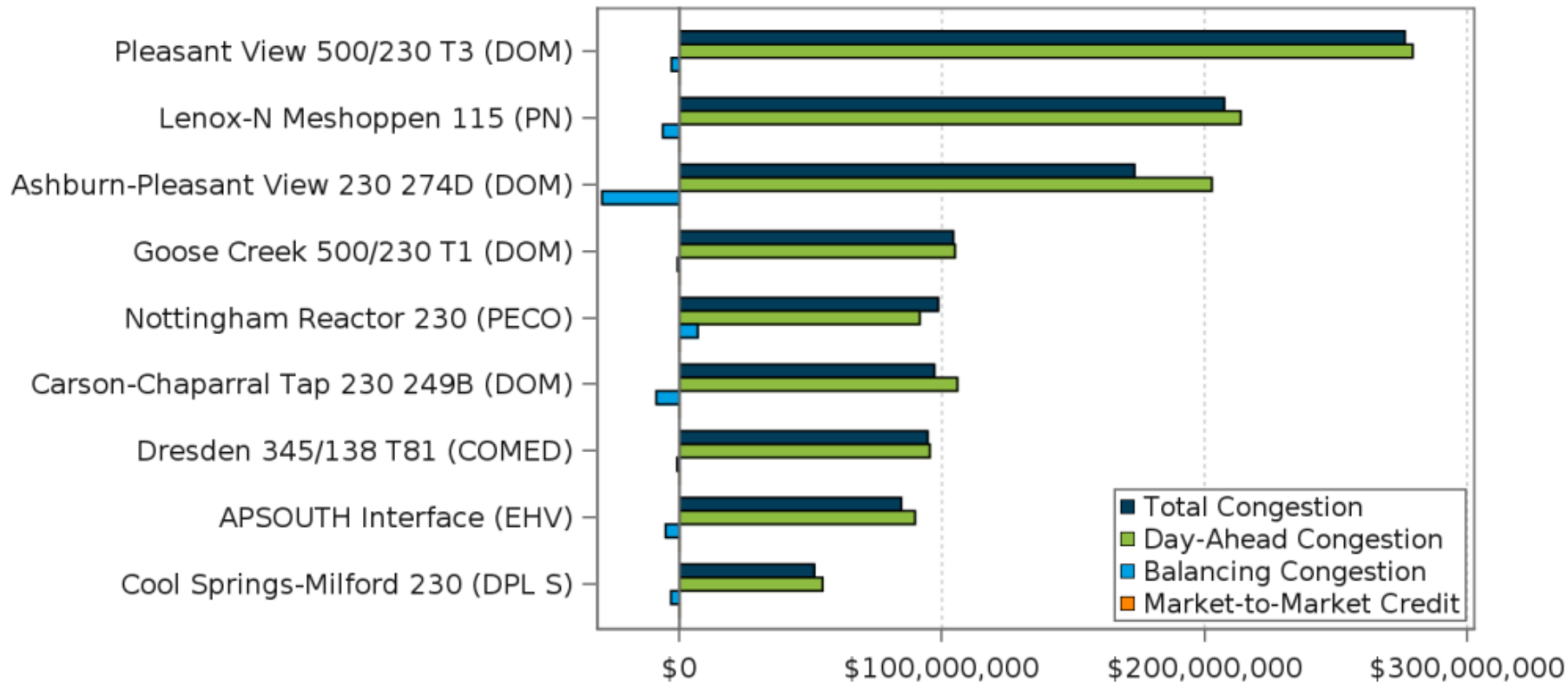


# Ten Most Heavily Congested Transmission Facilities - Overall, September



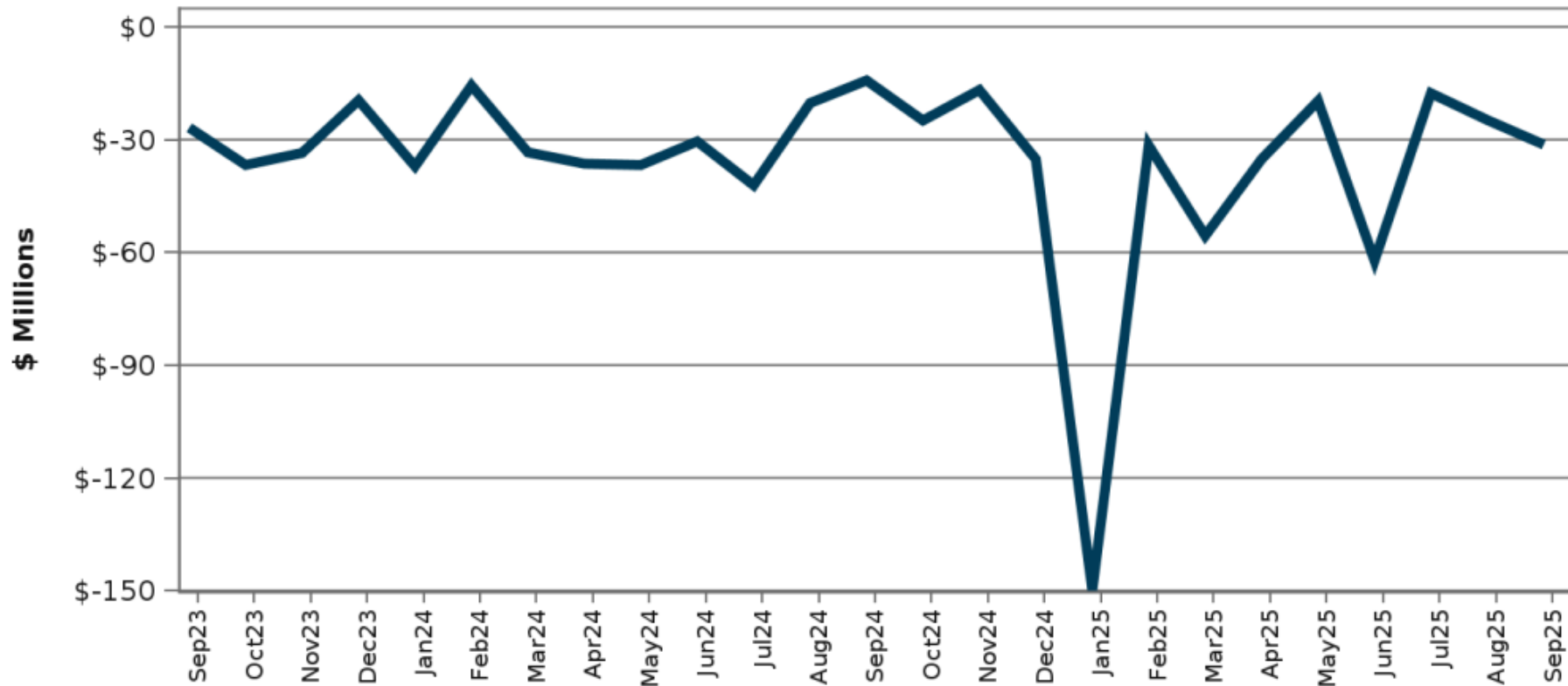
The ten most heavily congested facilities account for 77% of total congestion for September.

## Ten Most Heavily Congested Transmission Facilities - Overall, 2025



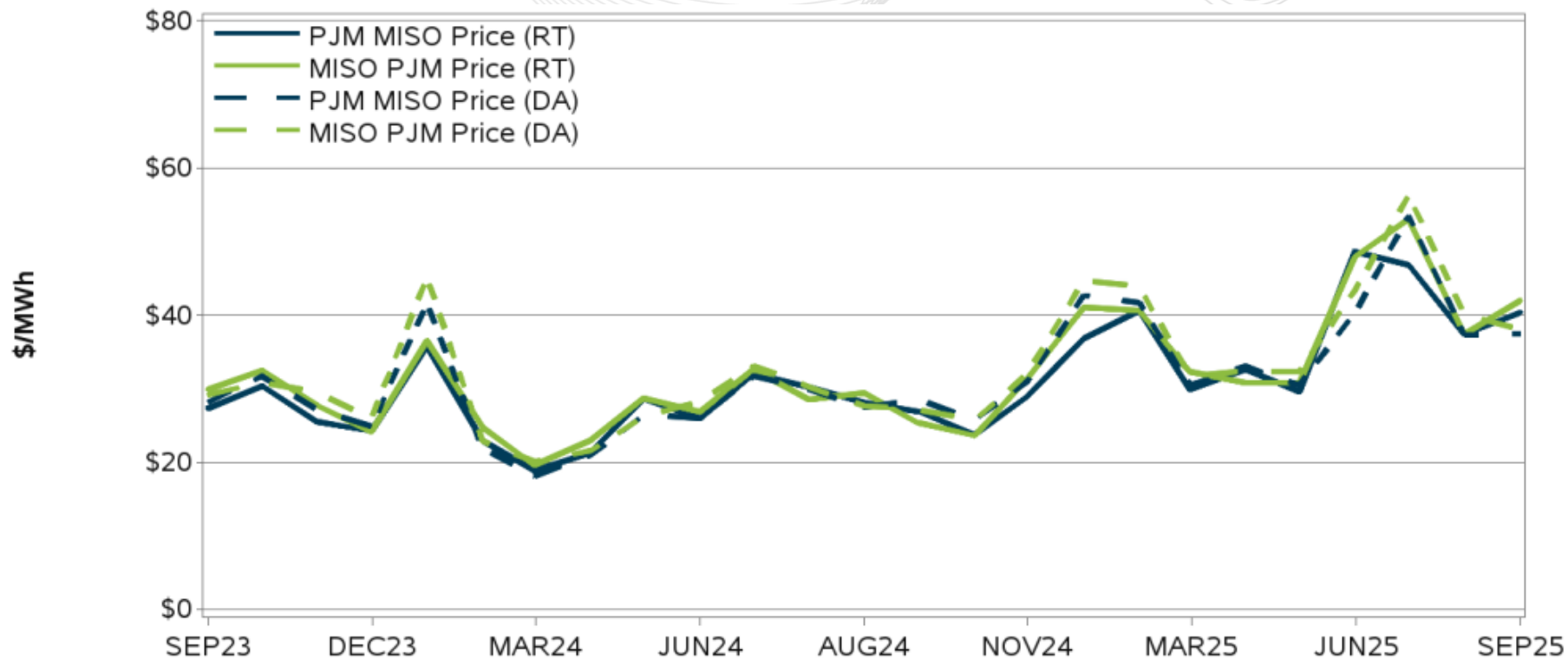
The ten most heavily congested facilities account for 68% of total congestion for 2025.

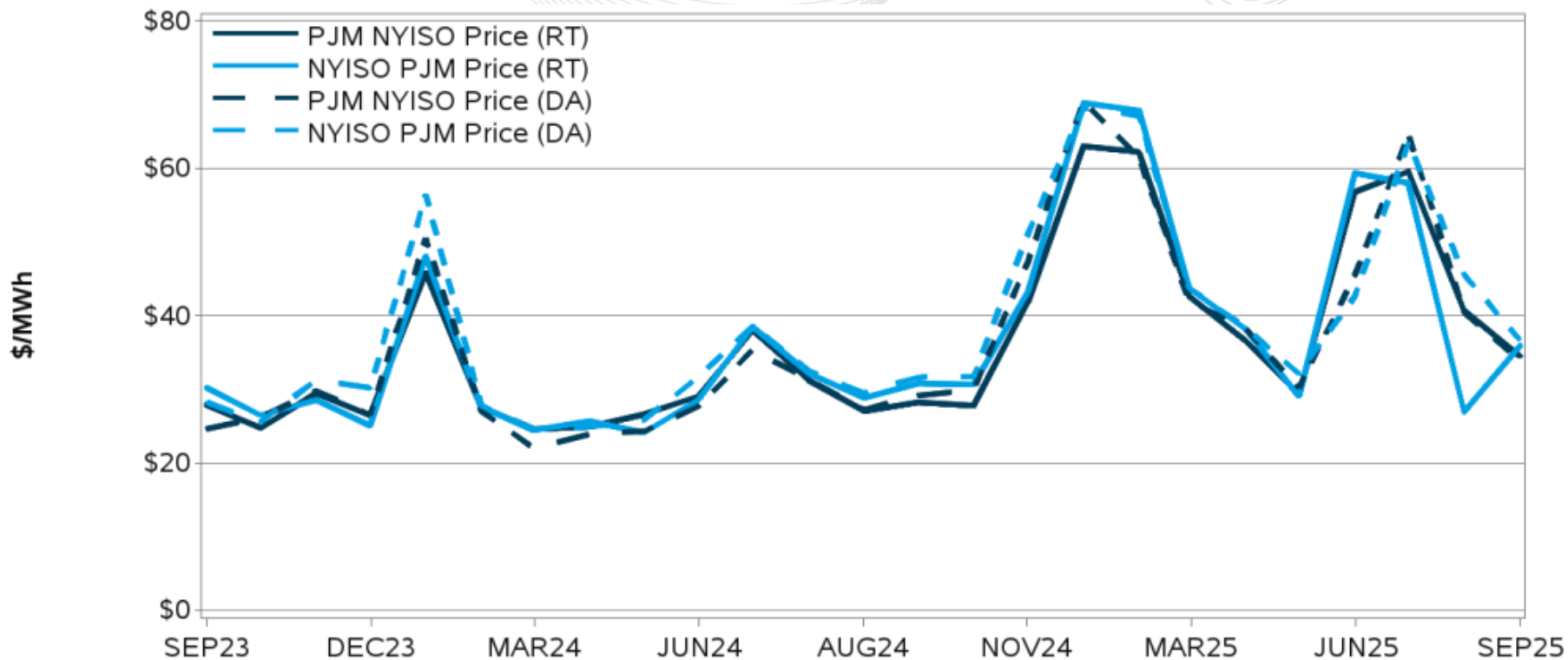
# Balancing Congestion Charge Revenues (BLI 2215)



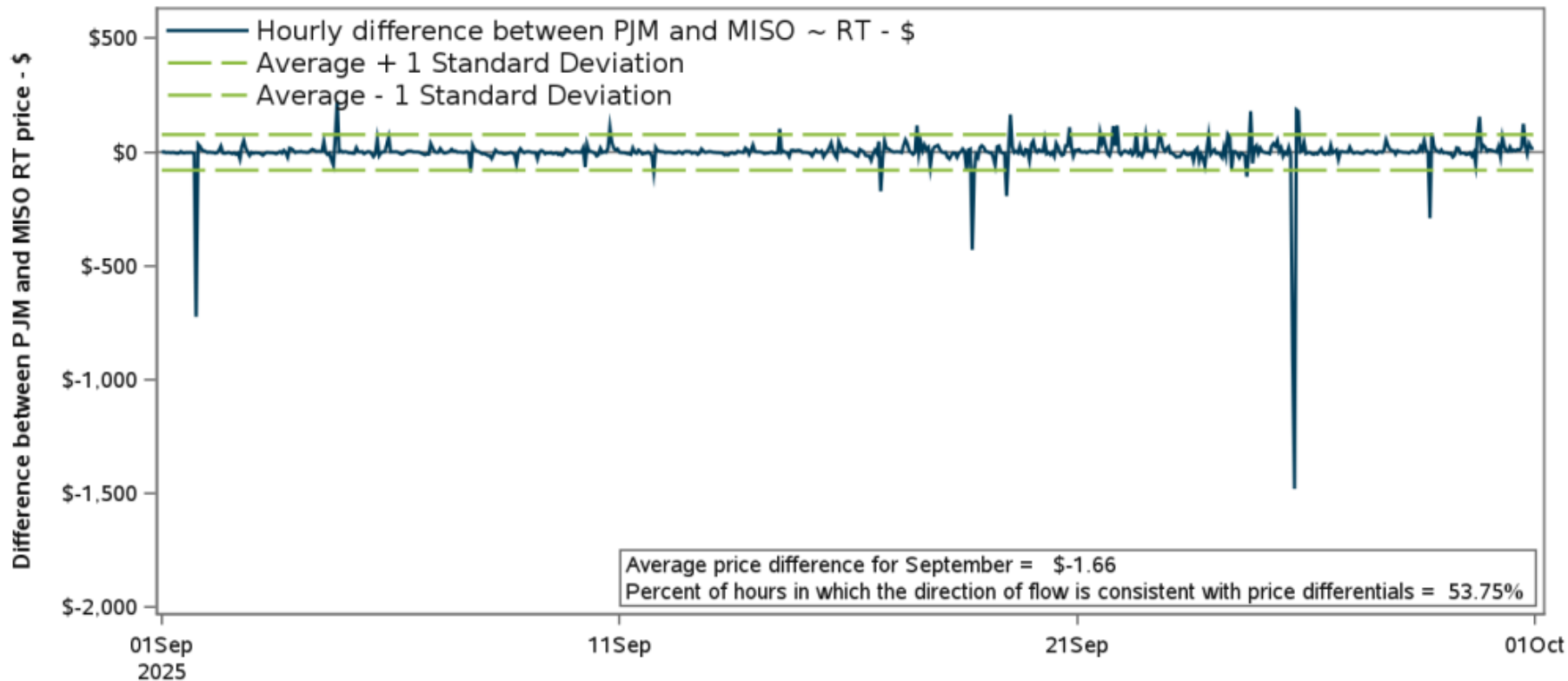
# Energy Market

## Interchange/Seams Summary



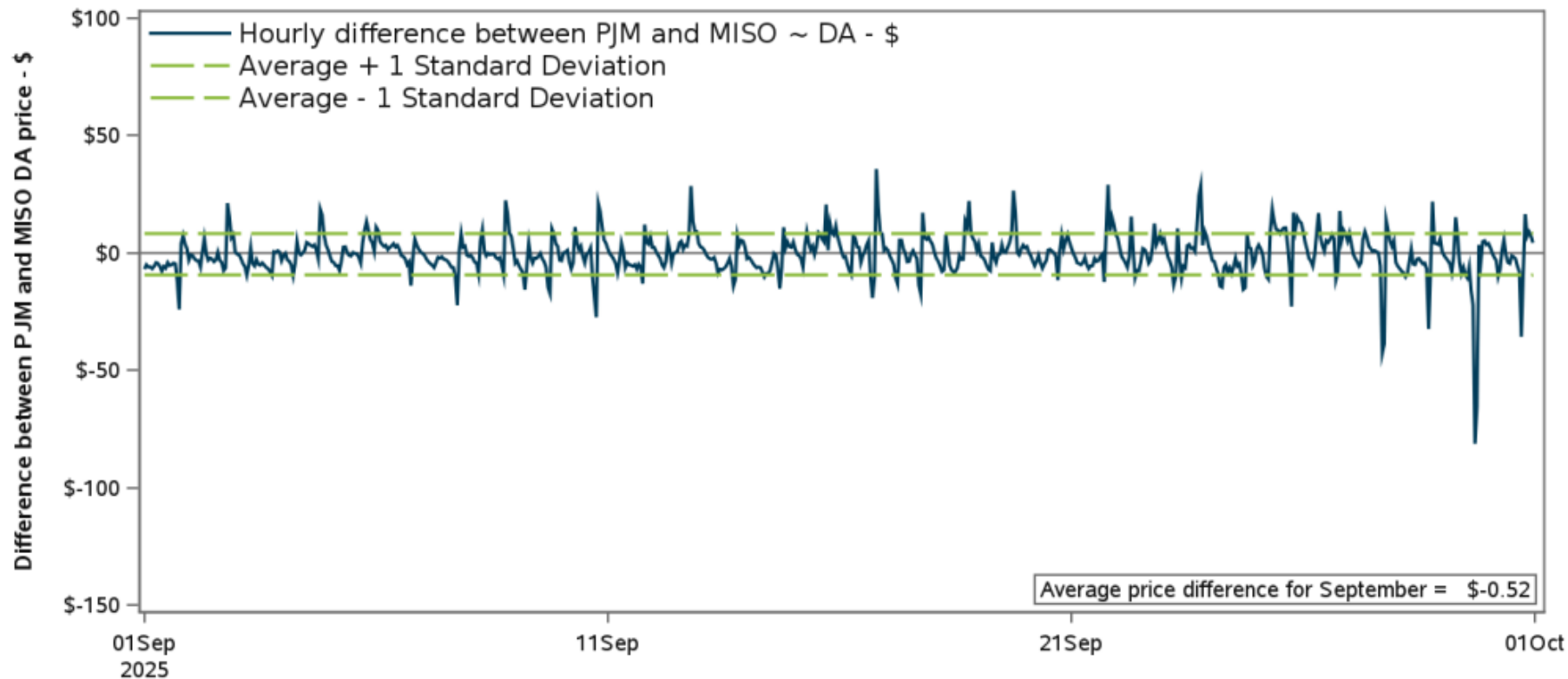


# Hourly Difference Between PJM and MISO Real-Time Prices



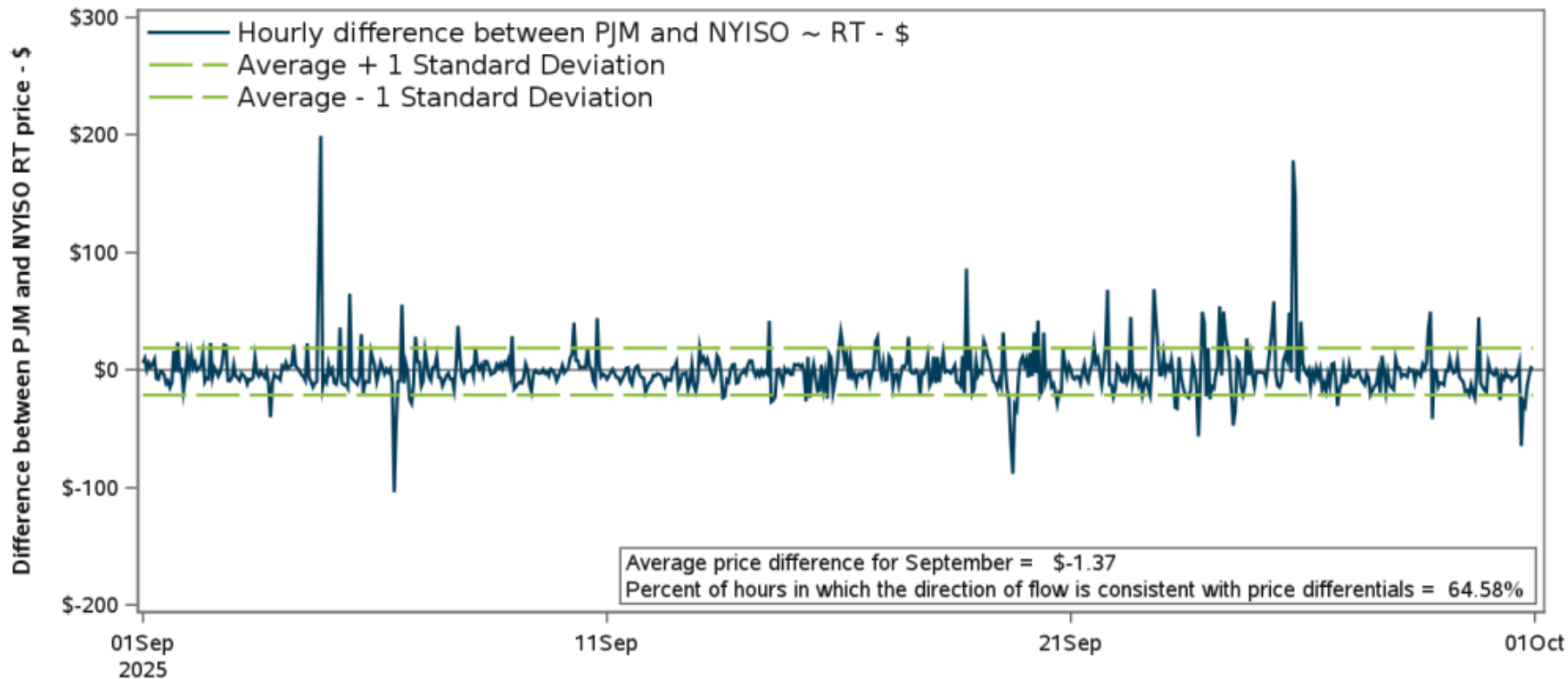
Positive values represent hours when the PJM price was higher. Negative values represent hours when the PJM price was lower.

# Hourly Difference Between PJM and MISO Day-Ahead Prices



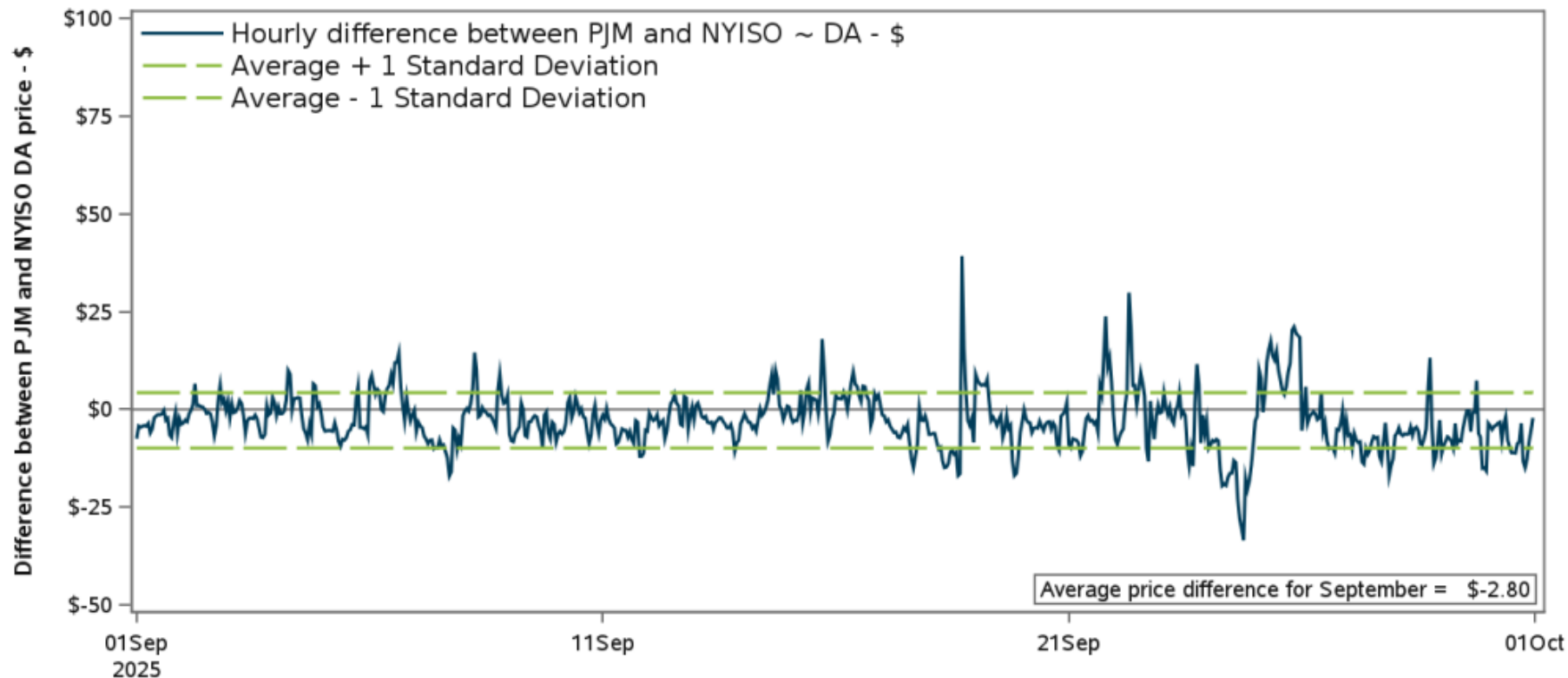
Positive values represent hours when the PJM price was higher. Negative values represent hours when the PJM price was lower.

# Hourly Difference Between PJM and NYISO Real-Time Prices



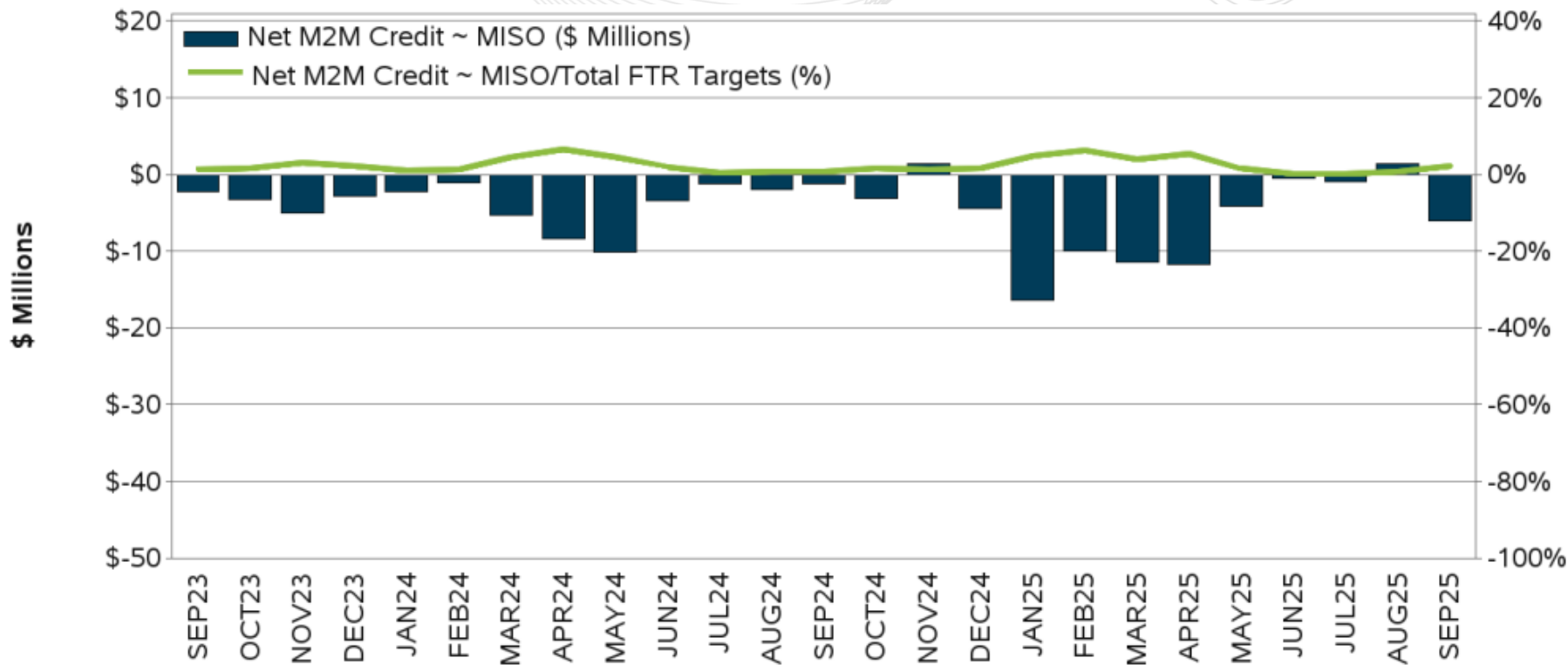
Positive values represent hours when the PJM price was higher. Negative values represent hours when the PJM price was lower.

# Hourly Difference Between PJM and NYISO Day-Ahead Prices



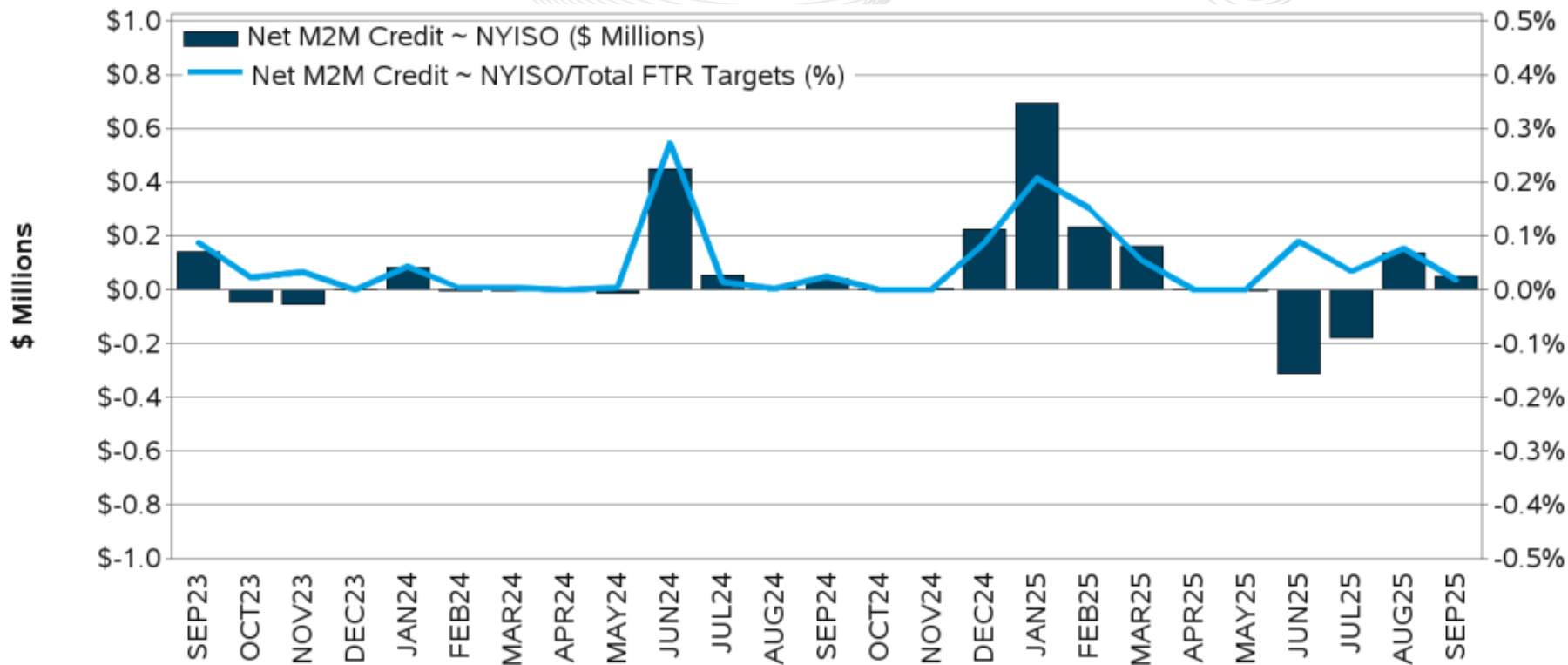
Positive values represent hours when the PJM price was higher. Negative values represent hours when the PJM price was lower.

# PJM-MISO Market-to-Market Coordination Settlement



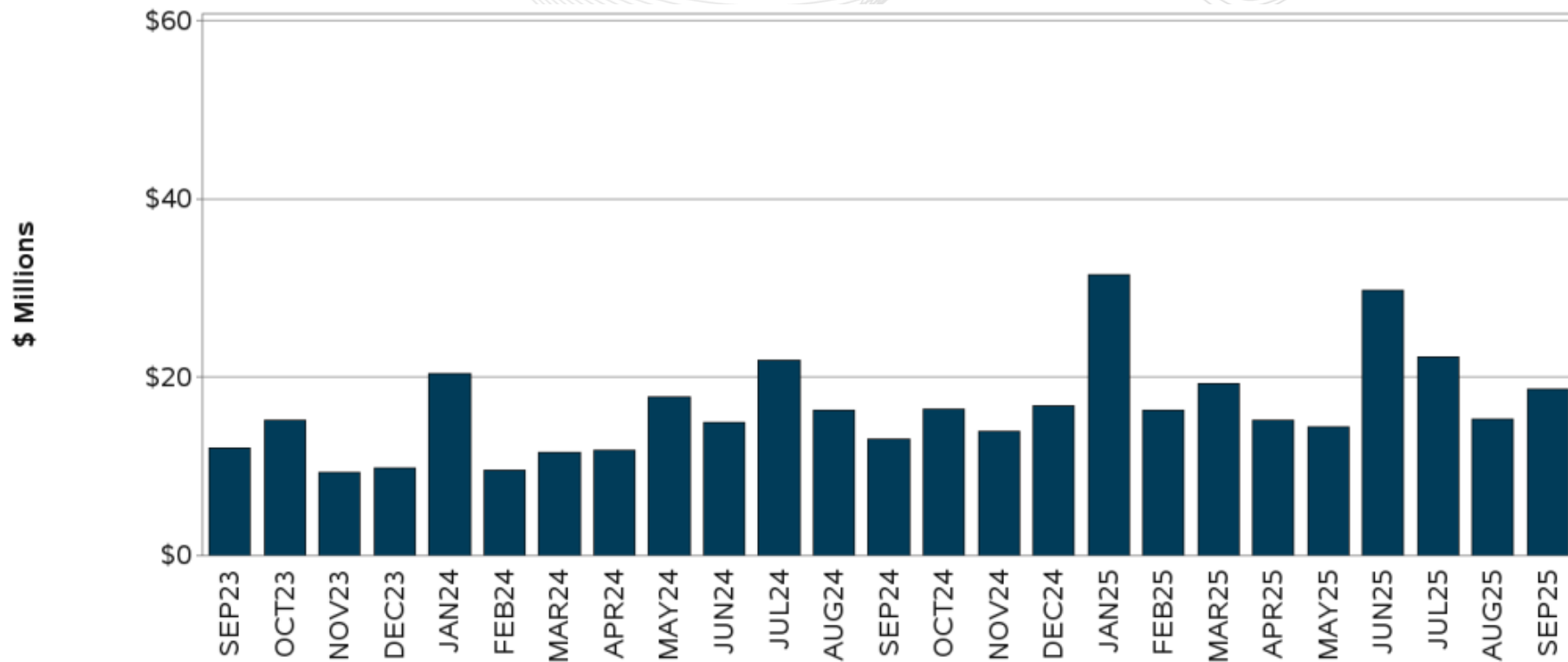
Negative M2M Credit represents PJM payment to MISO

# PJM-NYISO Market-to-Market Coordination Settlement

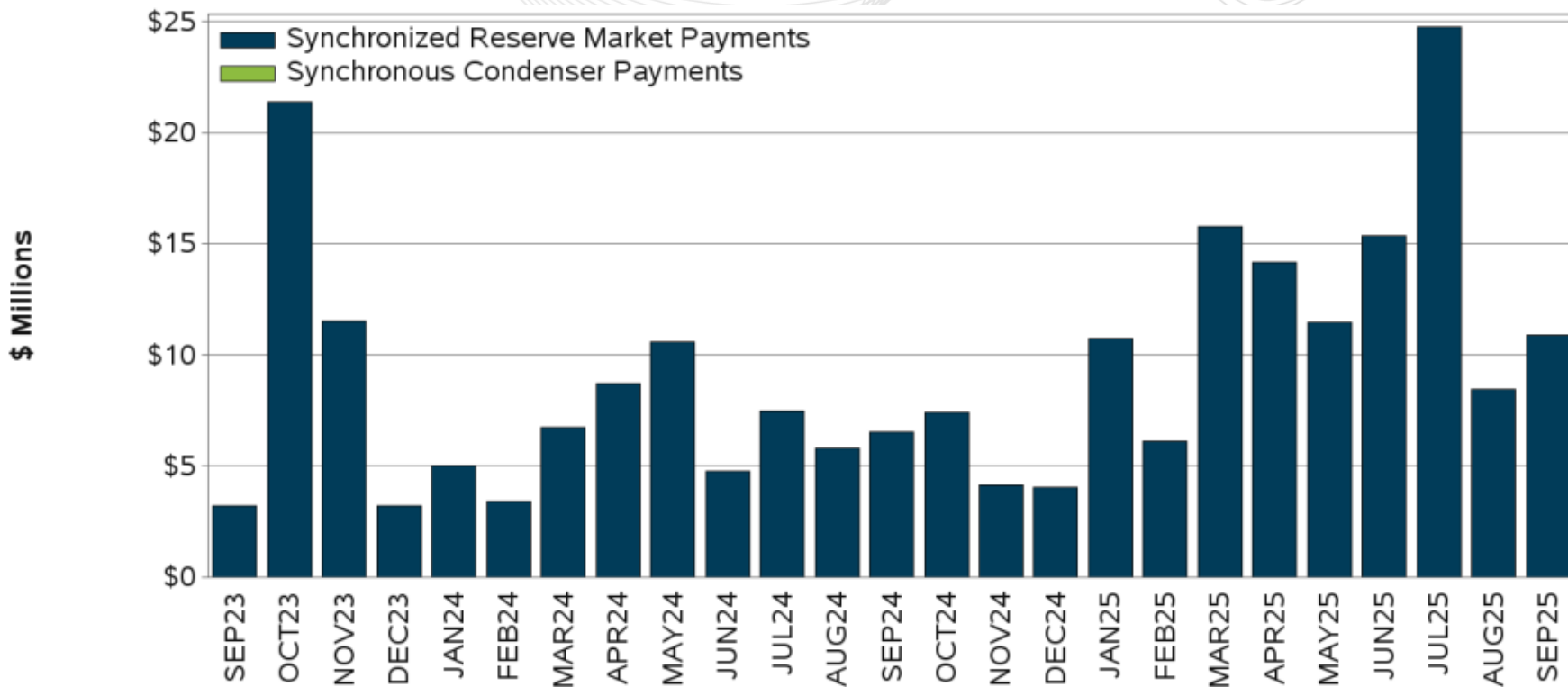


Negative M2M Credit represents PJM payment to NYISO

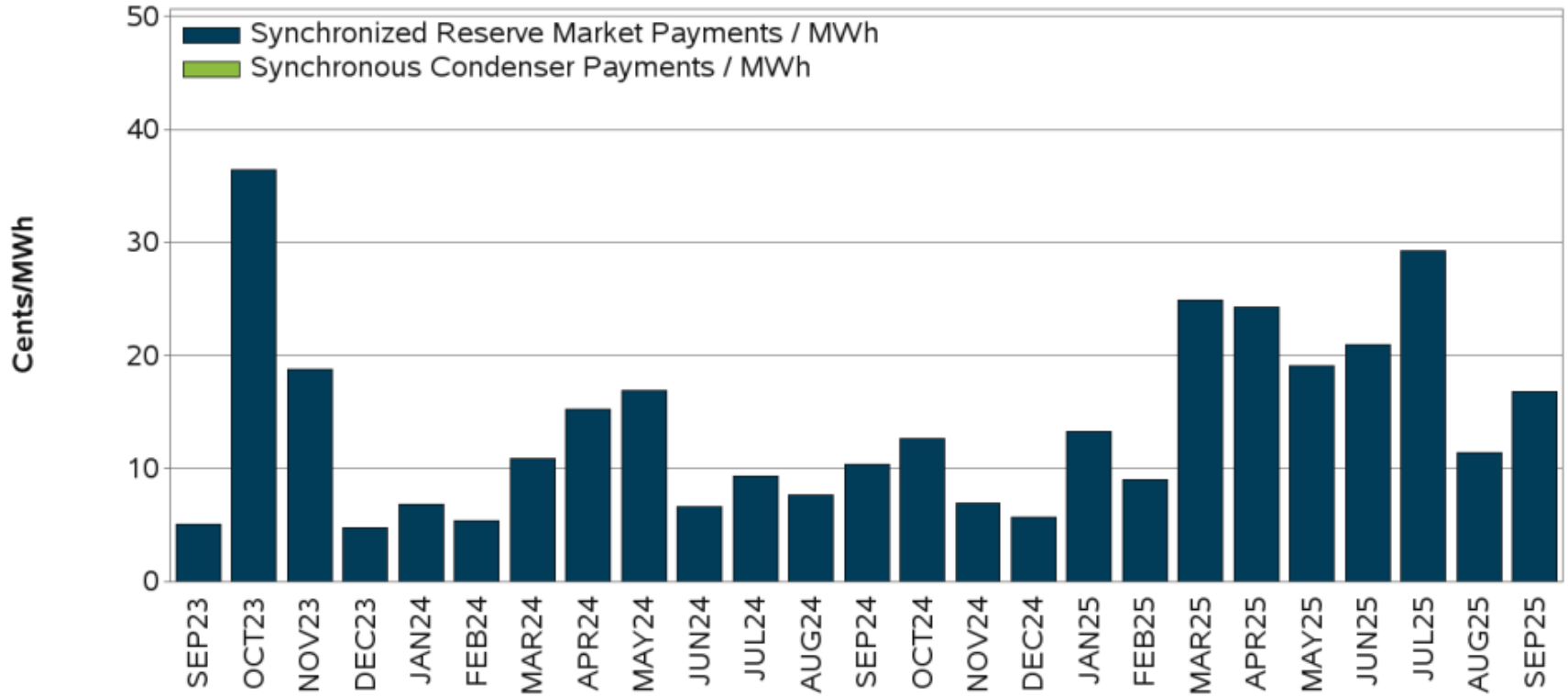
# Ancillary Service Market Summary



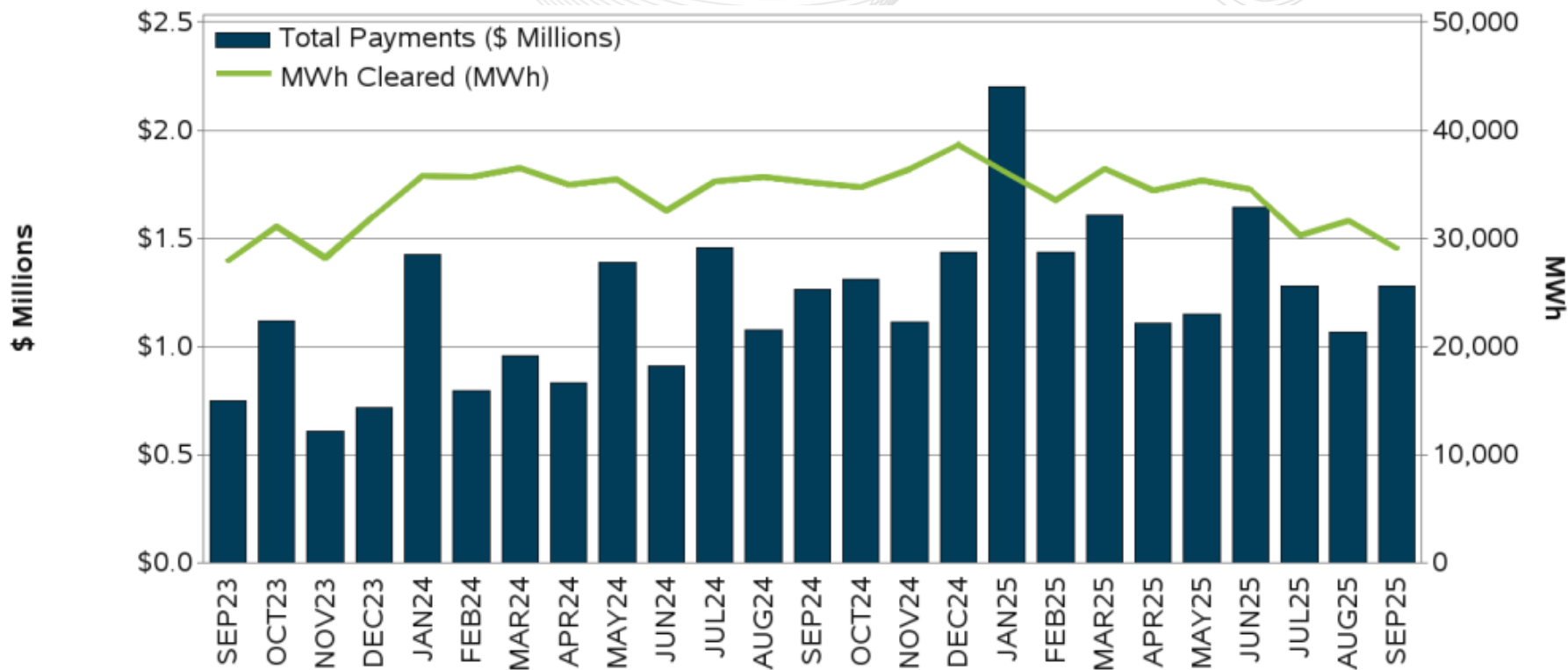
# Synchronized Reserve and Synchronous Condenser Costs



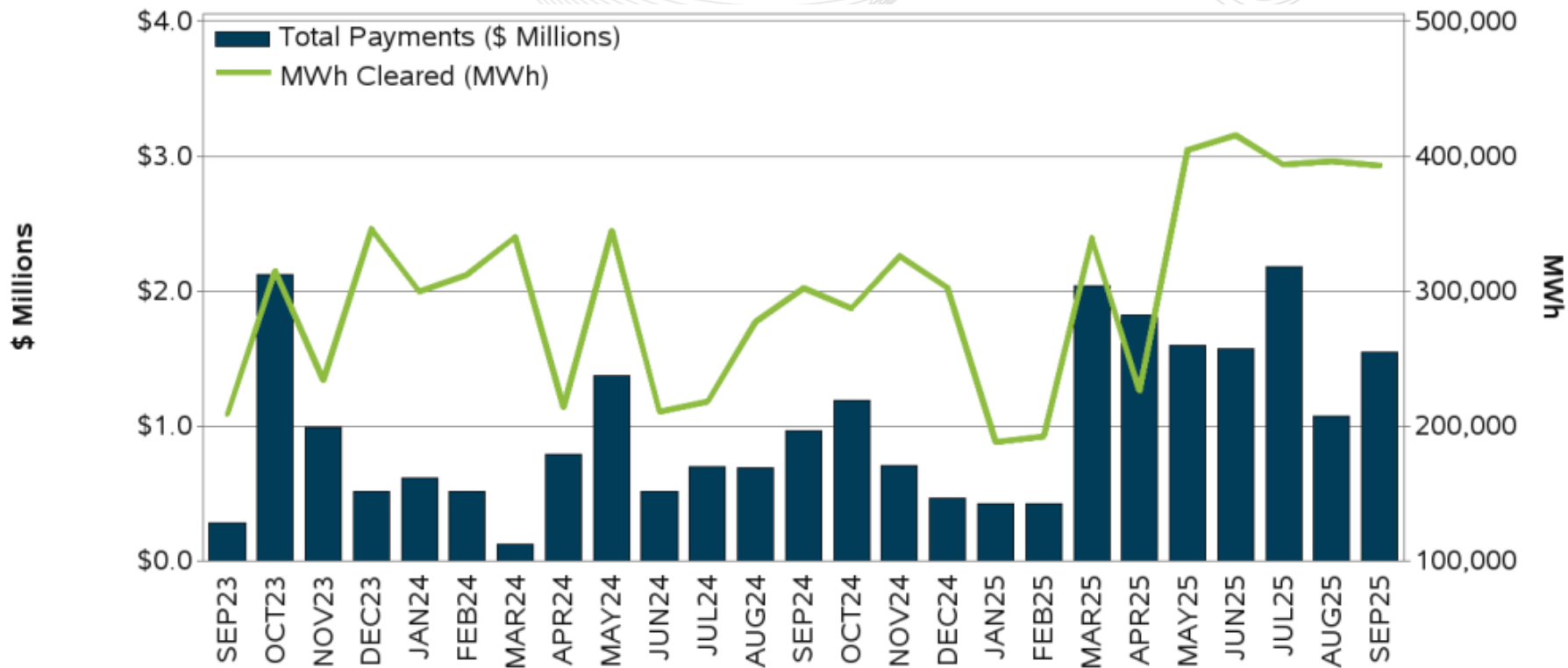
# Load-Adjusted Synchronized Reserve and Synchronous Condenser Costs

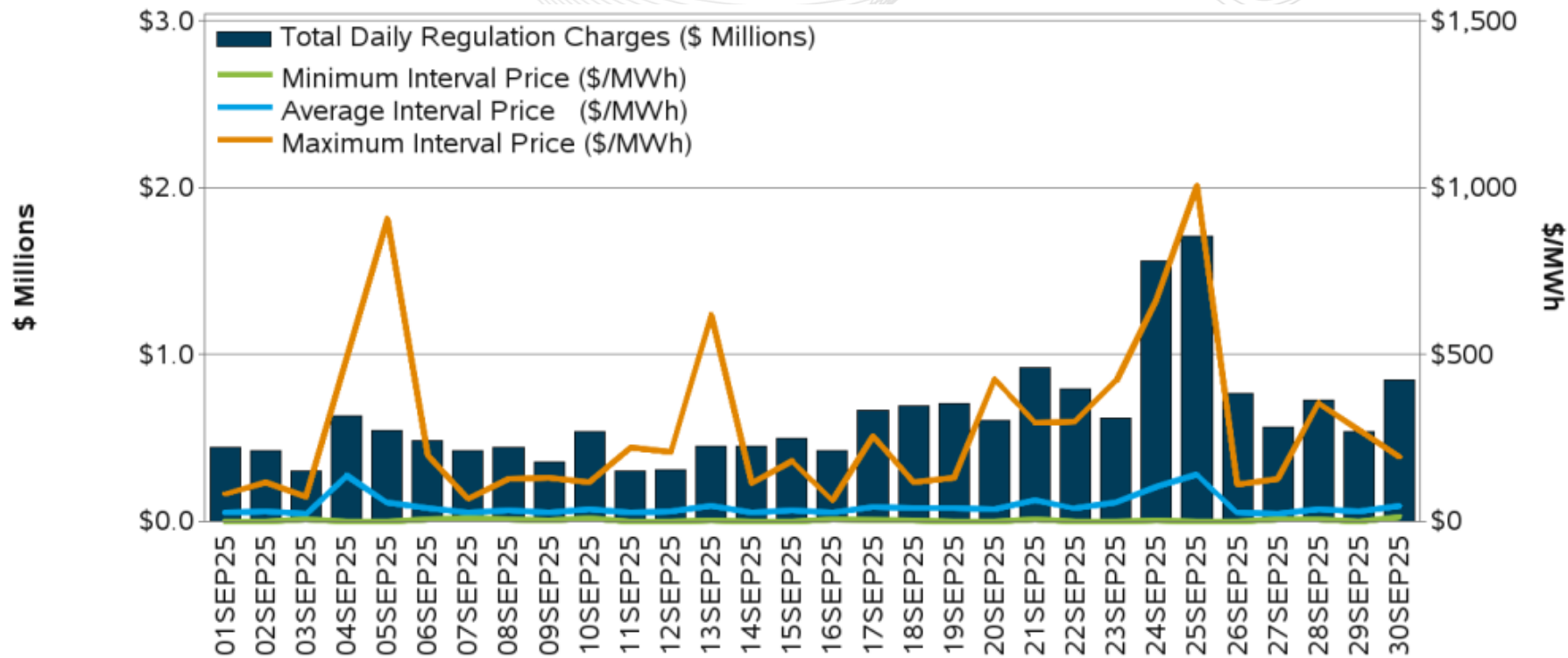


# DR Participation in PJM Regulation Markets

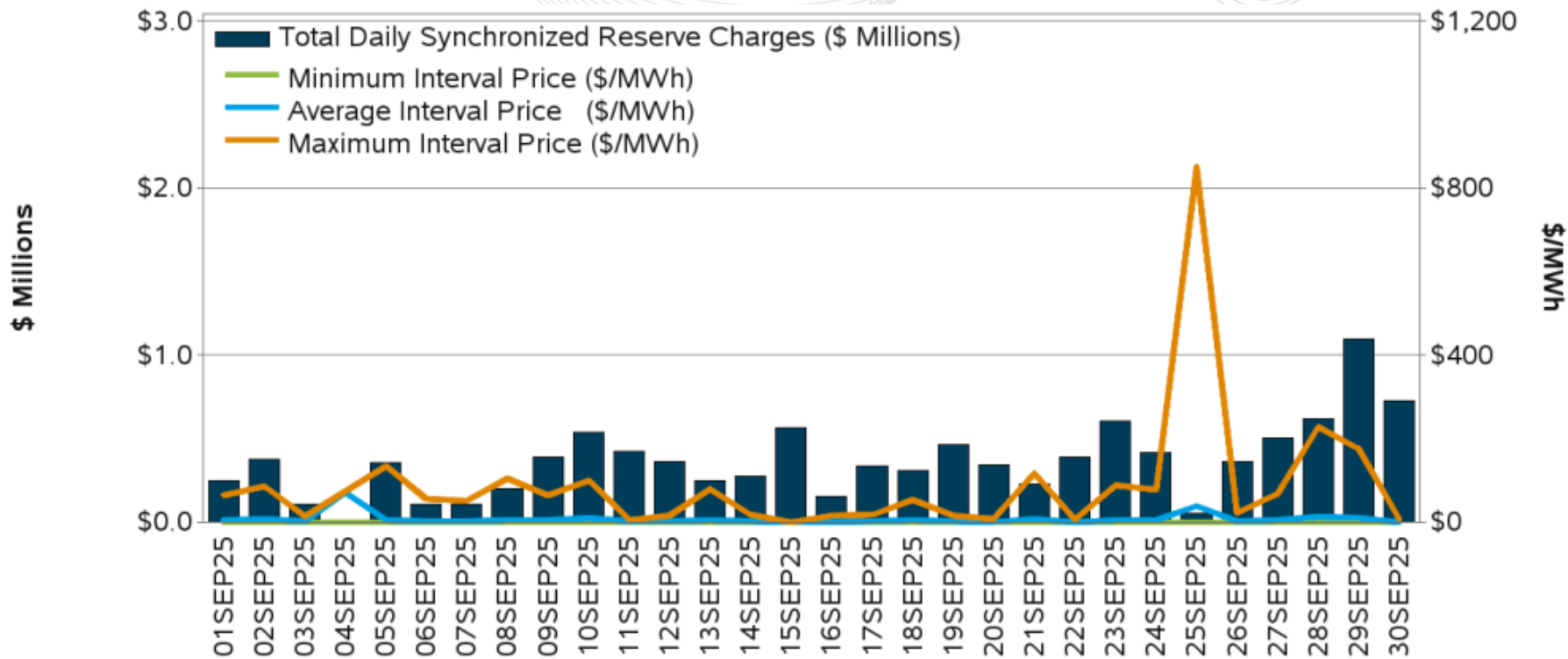


# DR Participation in PJM Synchronized Reserve Markets





# Synchronized Reserve Market Daily Prices and Charges



Jennifer Warner-Freeman  
[Jennifer.Freeman@pjm.com](mailto:Jennifer.Freeman@pjm.com)



### Member Hotline

(610) 666 – 8980

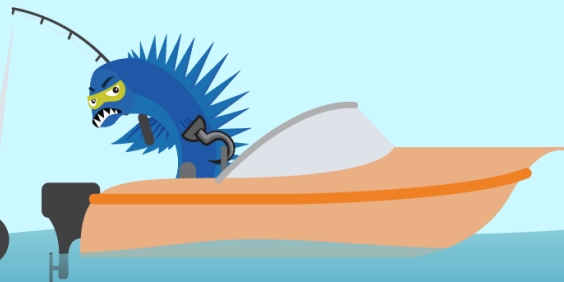
(866) 400 – 8980

[custsvc@pjm.com](mailto:custsvc@pjm.com)

# PROTECT THE POWER GRID THINK BEFORE YOU CLICK!



BE ALERT TO  
MALICIOUS PHISHING  
EMAILS



Report suspicious email activity to PJM.  
Call (610) 666-2244 or email [it\\_ops\\_ctr\\_shift@pjm.com](mailto:it_ops_ctr_shift@pjm.com)