

# Markets Report

MC Webinar  
March 17, 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 February, temperatures averaged out to a typical level. The sum of Heating and Cooling Degree Days was approximately equal to the historic average. ([Slides 7-8](#))
- Energy use was slightly above its historic average for February. ([Slides 7-8](#))
- In February, uplift exceeded \$800,000 on 9 days. ([Slides 24 & 25](#))

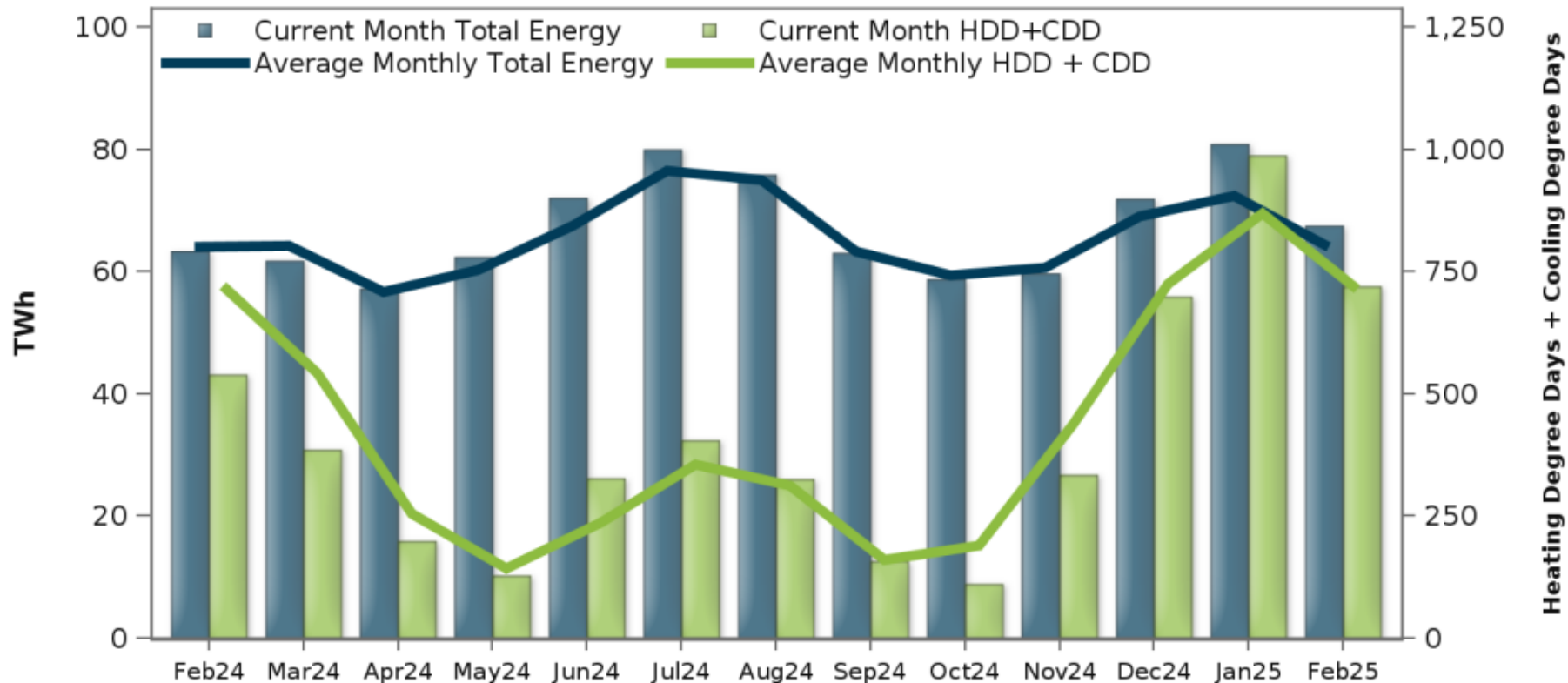
- Load-weighted average LMP for 2025 is \$56.51/MWh: ([Slides 33-34](#))
  - February 2025 was \$48.90/MWh, which is higher than February 2024 (\$24.90/MWh) and February 2023 (\$26.00/MWh).
- There were three 5-minute intervals that experienced shortage pricing in February. ([Slide 32](#), Report Appendix)
- FTR revenue adequacy for the month of February is 90% and the 2024-2025 Planning Year is currently funded at 100%. ([Slides 50-53](#))
- Congestion values in 2025 thus far have been higher than those seen in 2024. ([Slide 51](#))
- Regulation and Synchronized Reserve market costs have generally tracked with energy prices over time. ([Slides 67-69](#))

- 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.

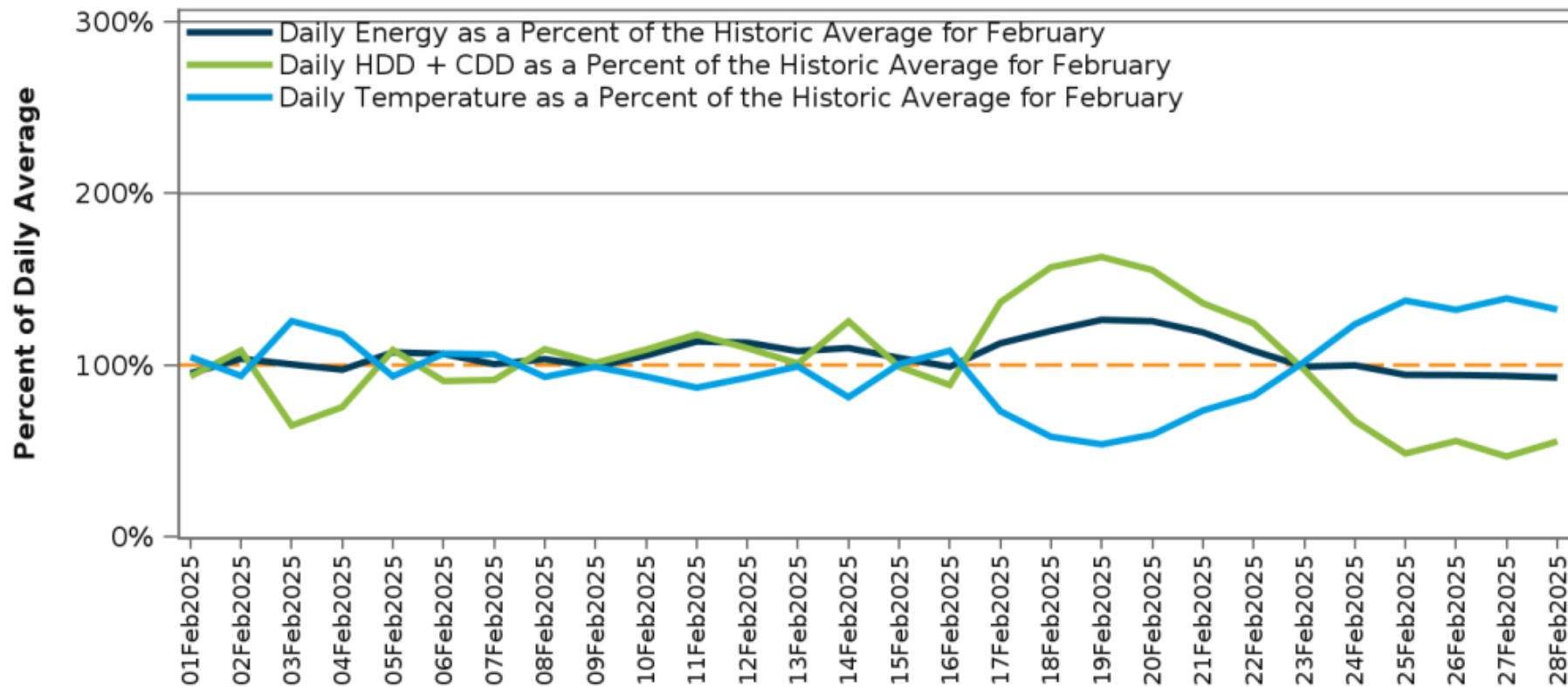
# Market Conditions

- 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, 2023. Averages include load data for all of TO zones in the current RTO footprint.

# Historic Average Weather and Energy versus Current Month

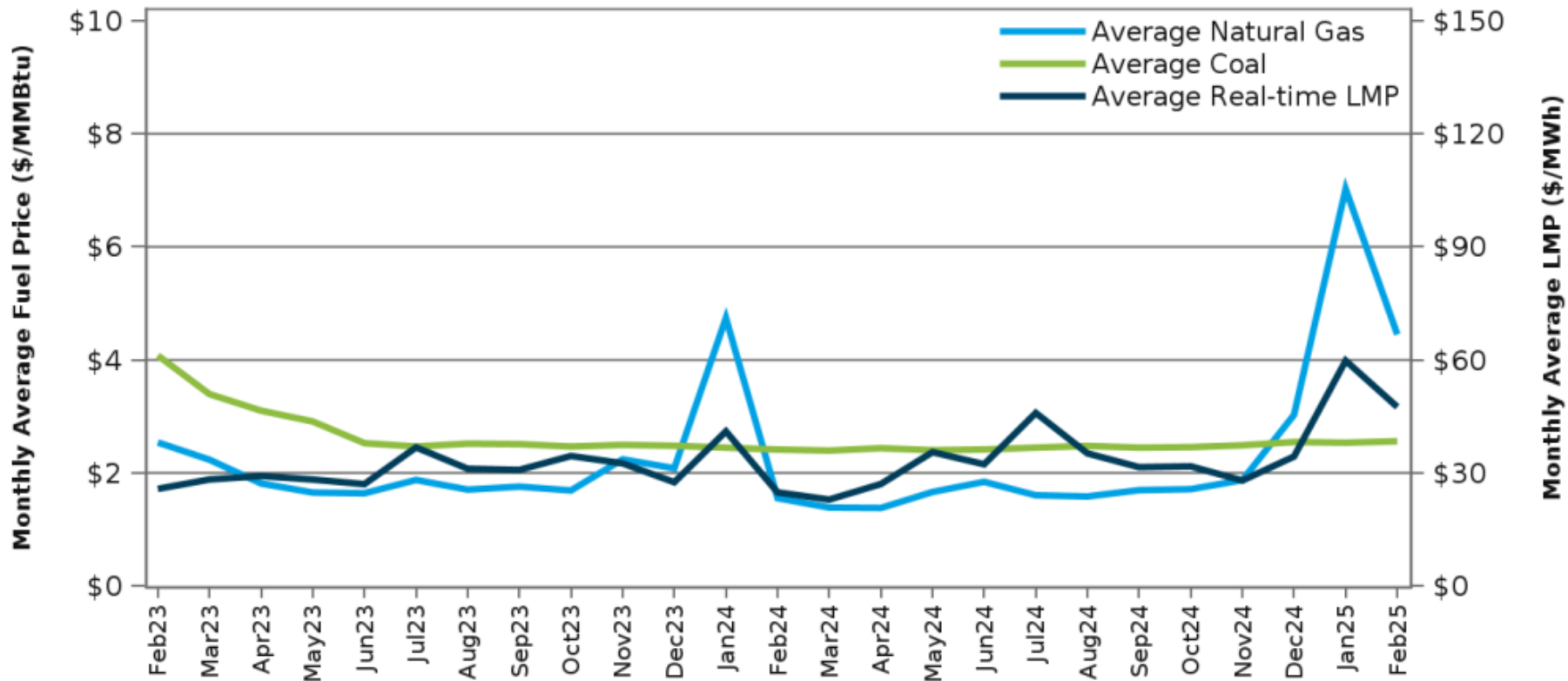


# Historic Average Weather and Energy versus Current Month - Daily

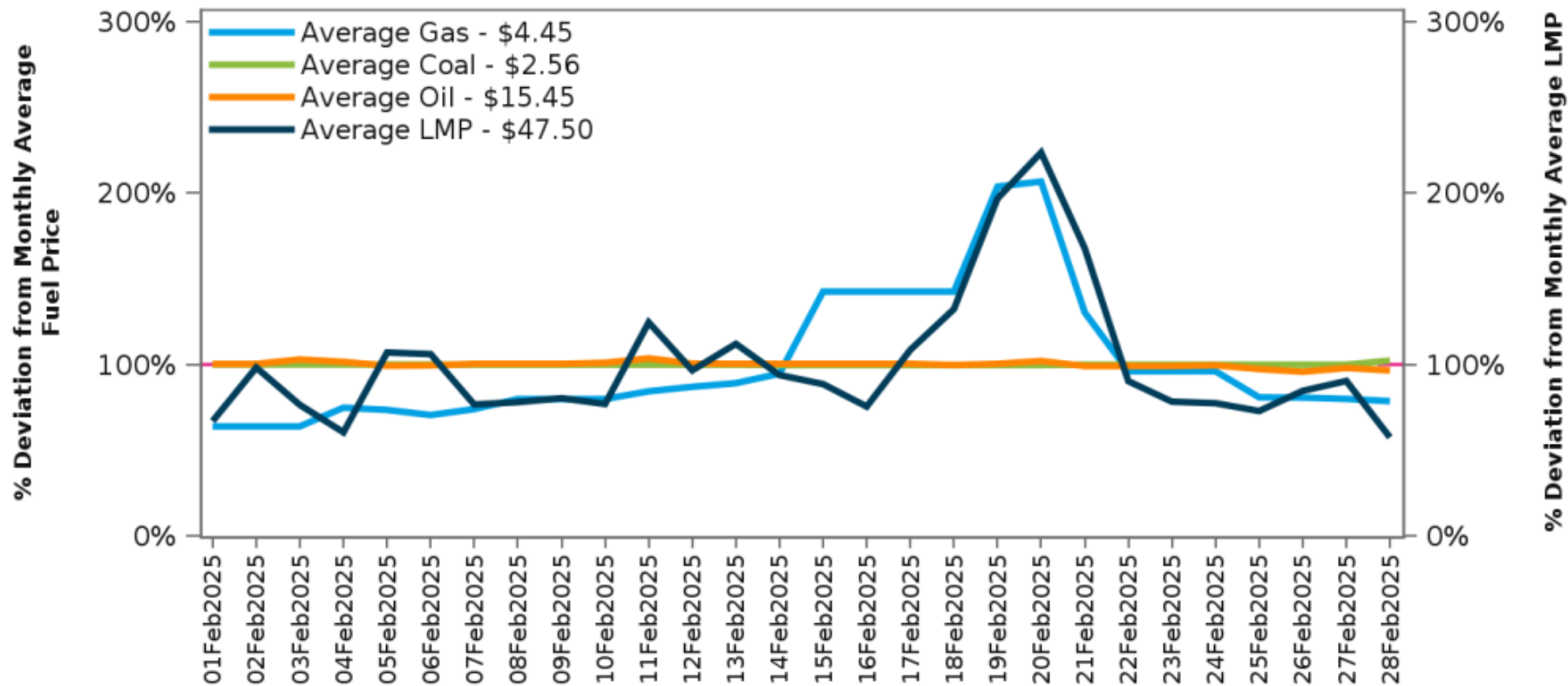




# Average Fuel Prices - Monthly

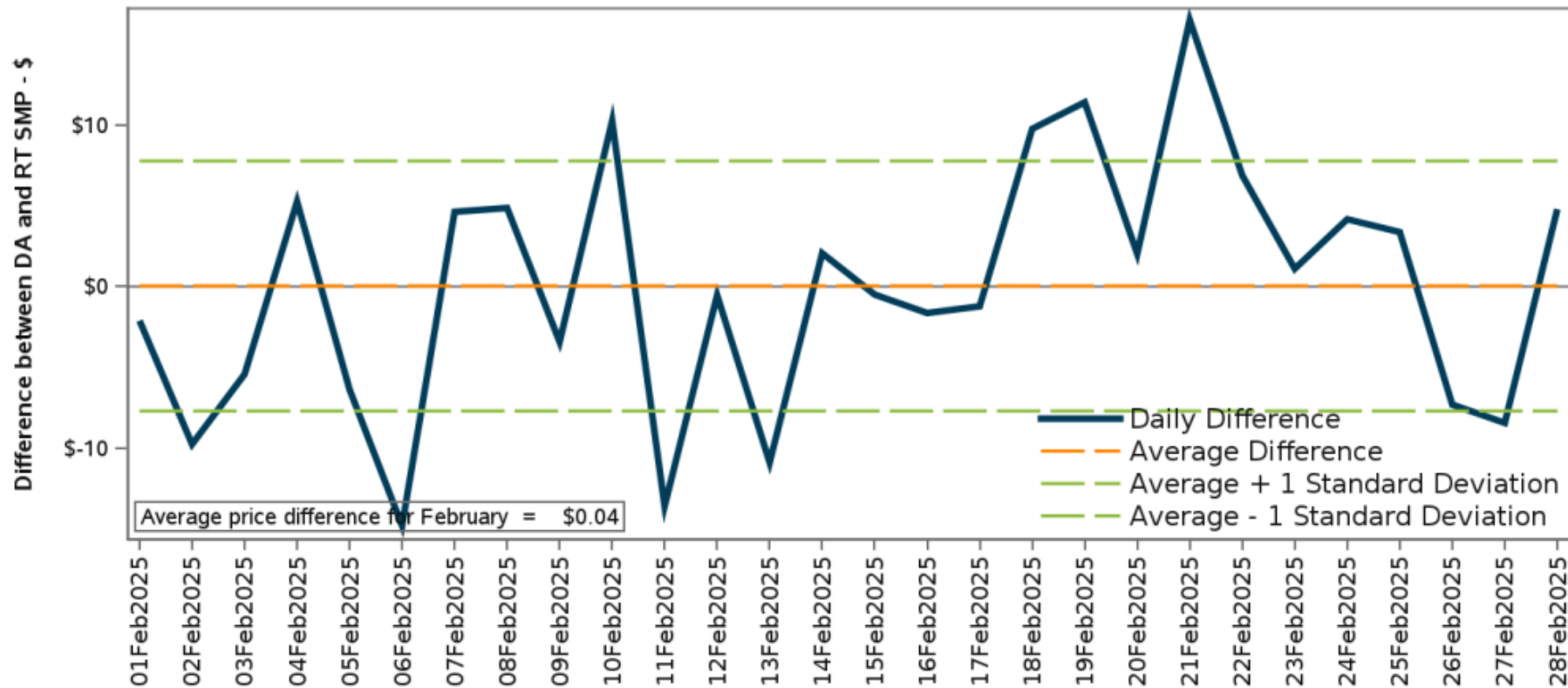


Fuel Price Source: S&P Global Platts



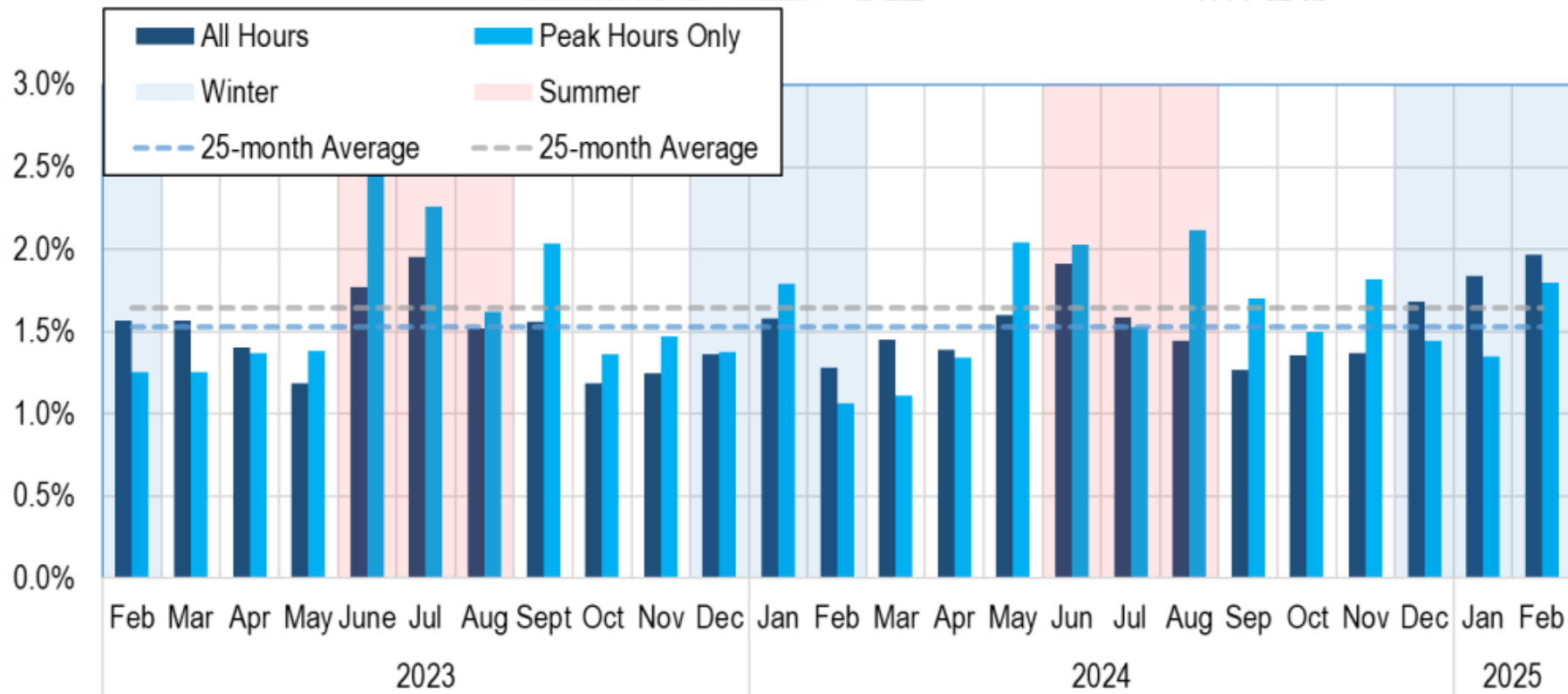
Fuel Price Source: S&P Global Platts

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

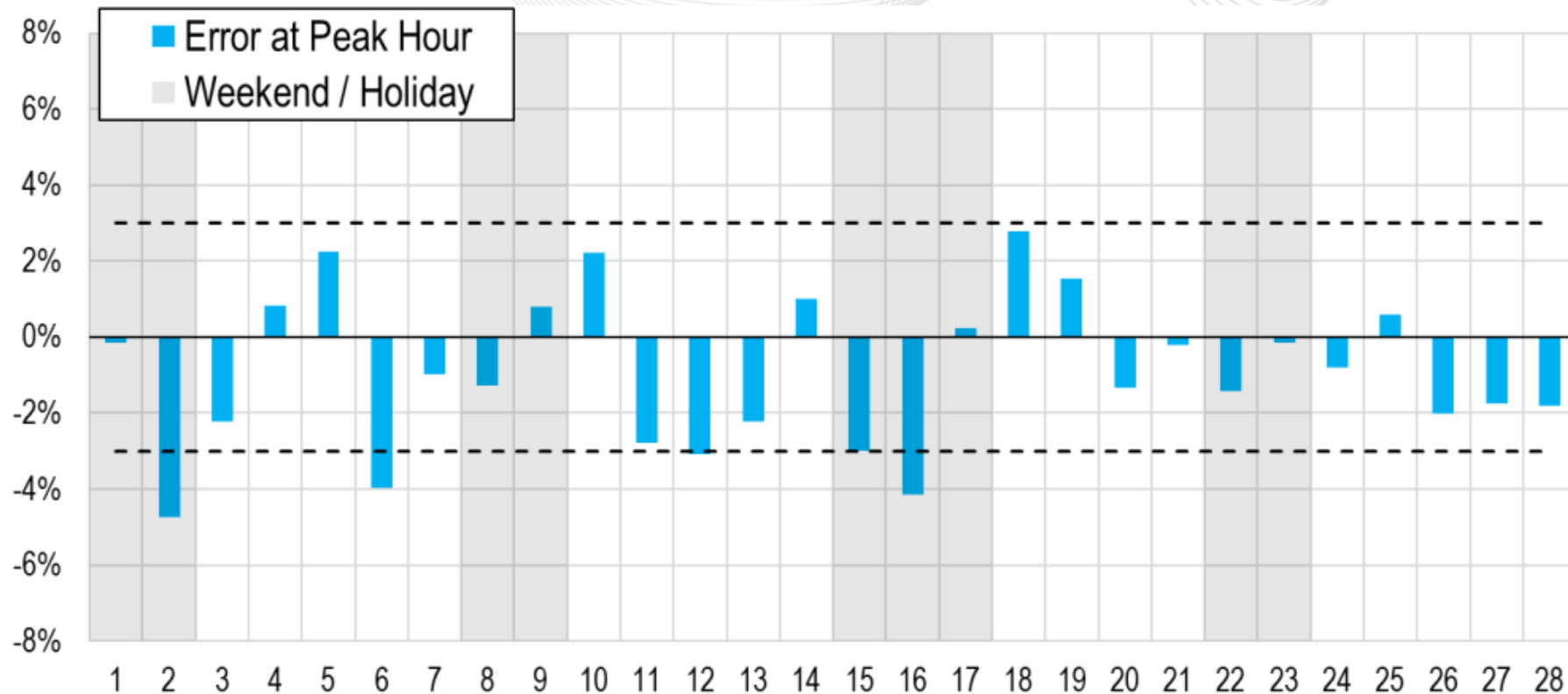


Positive values represent days when the DA daily average price was higher than RT. Negative values represent days when the DA price was lower.

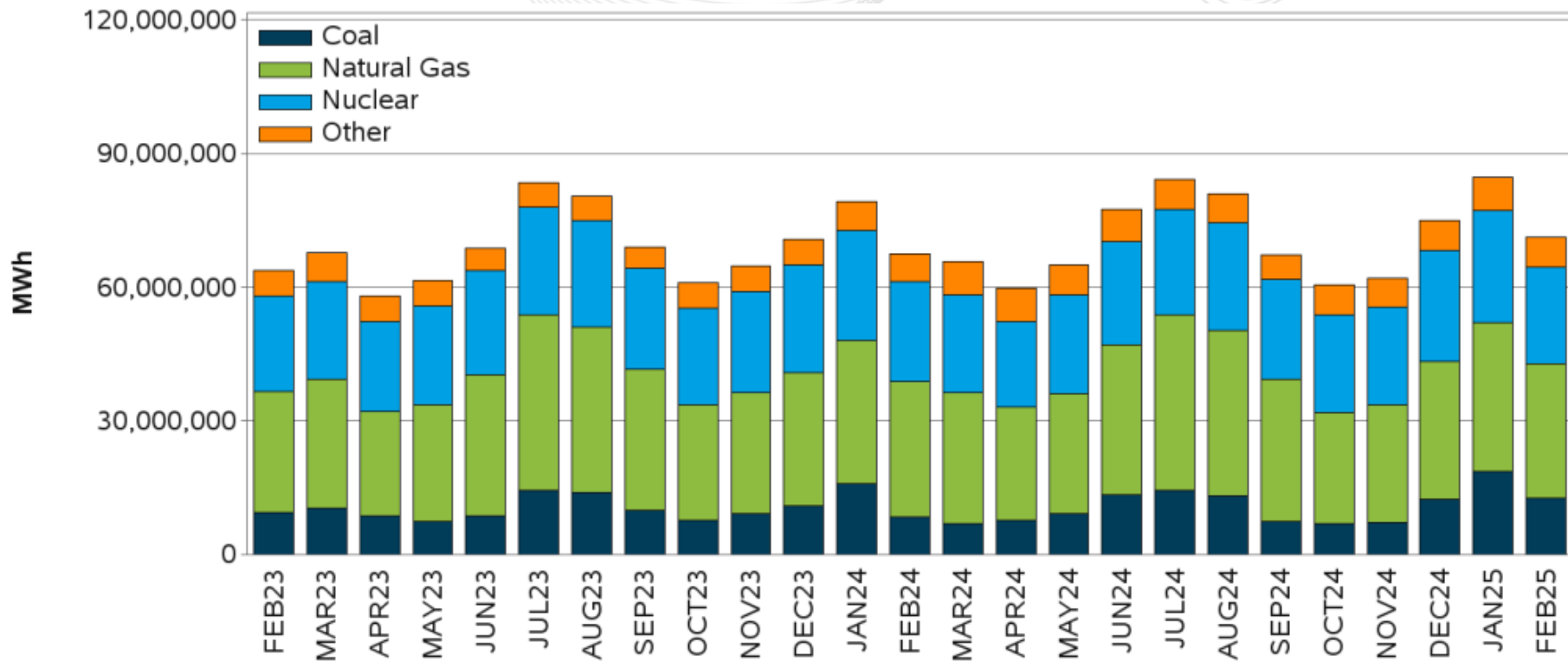
## Load Forecast Error - Monthly Absolute Error, 10:00 Forecast



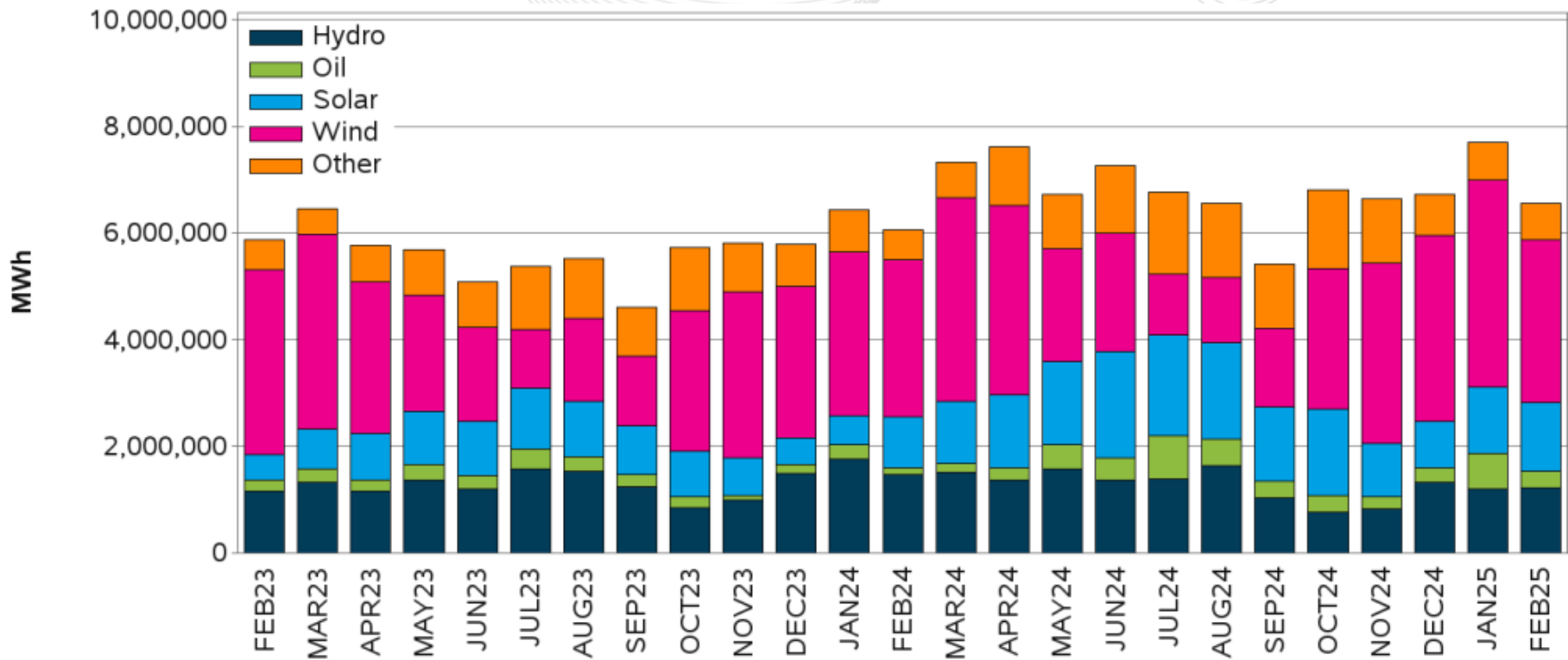
# Load Forecast Error - February Daily Peaks, 10:00 Forecast



- 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.
  - February 2: Temperatures came in cooler than forecast along with a storm system that brought precipitation across RTO and increased loads for majority of day.
  - February 6: Storm system led to prolonged and increased morning load, shifting timing of morning peak by two hours, leading to under-forecasting.
  - February 12: Colder than forecast temperatures as well as a winter system in the east led to higher the forecast loads.
  - February 16: Heavy rain and cooler than forecast temperatures led to higher loads for majority of day.

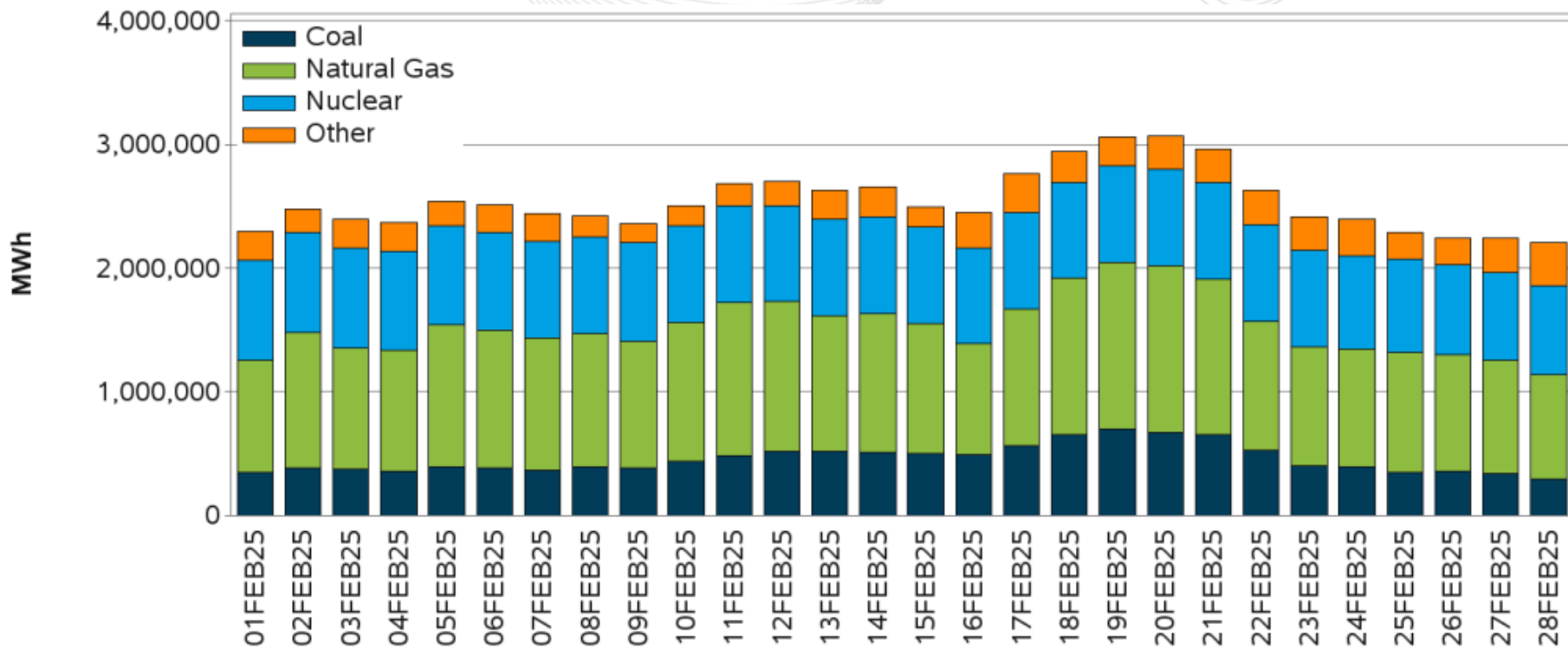


\*Other\* includes Hydro, Oil, Solar, Wind, and Other



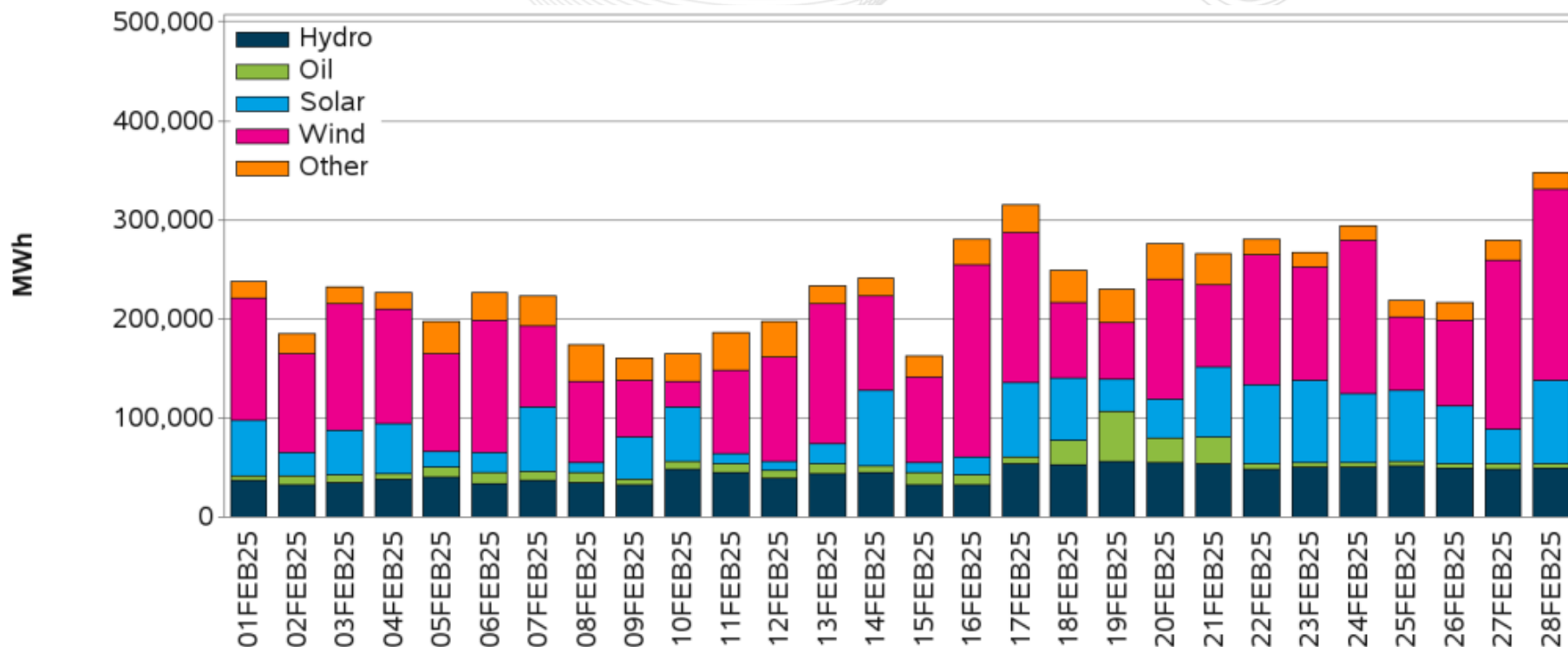
'Other' includes Flywheels, Multiple Fuels, Storage, and Other Renewables





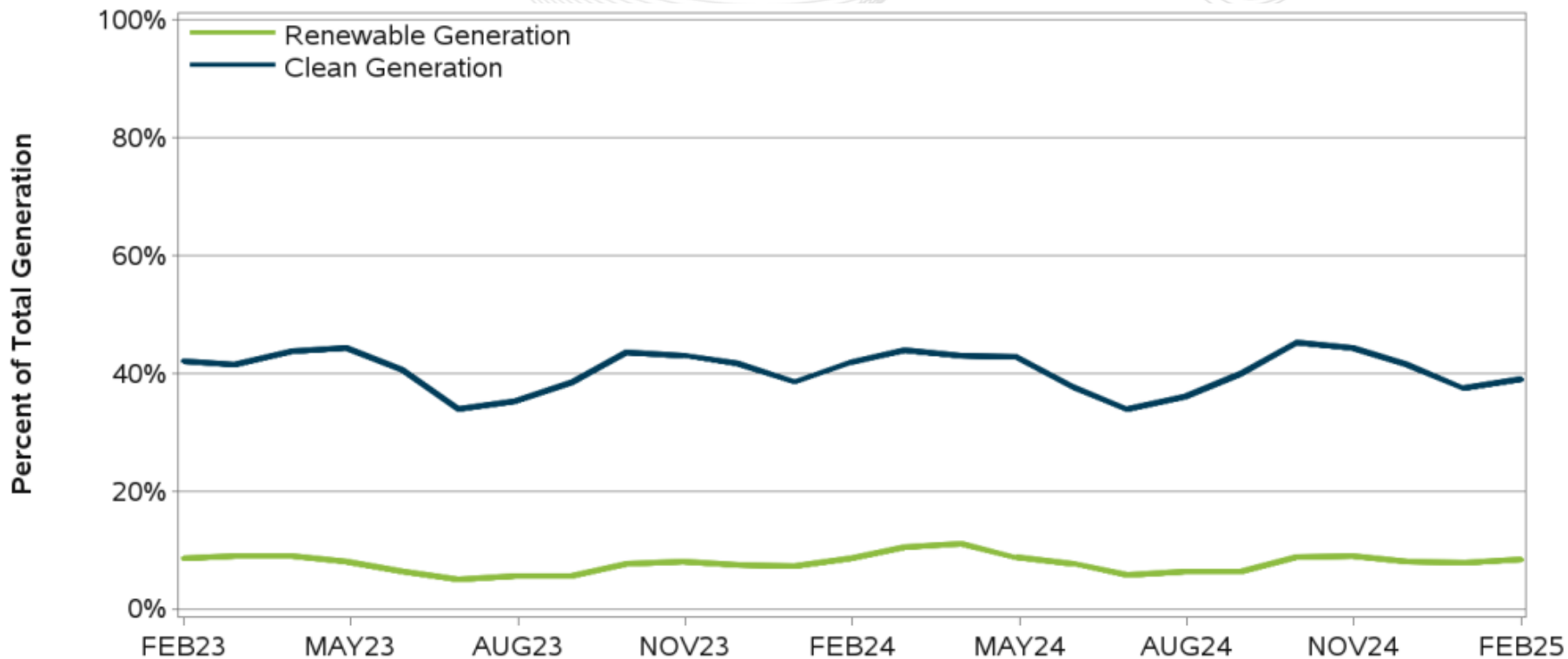
\*Other\* includes Hydro, Oil, Solar, Wind, and Other

# Daily Generation by Fuel, Other - February



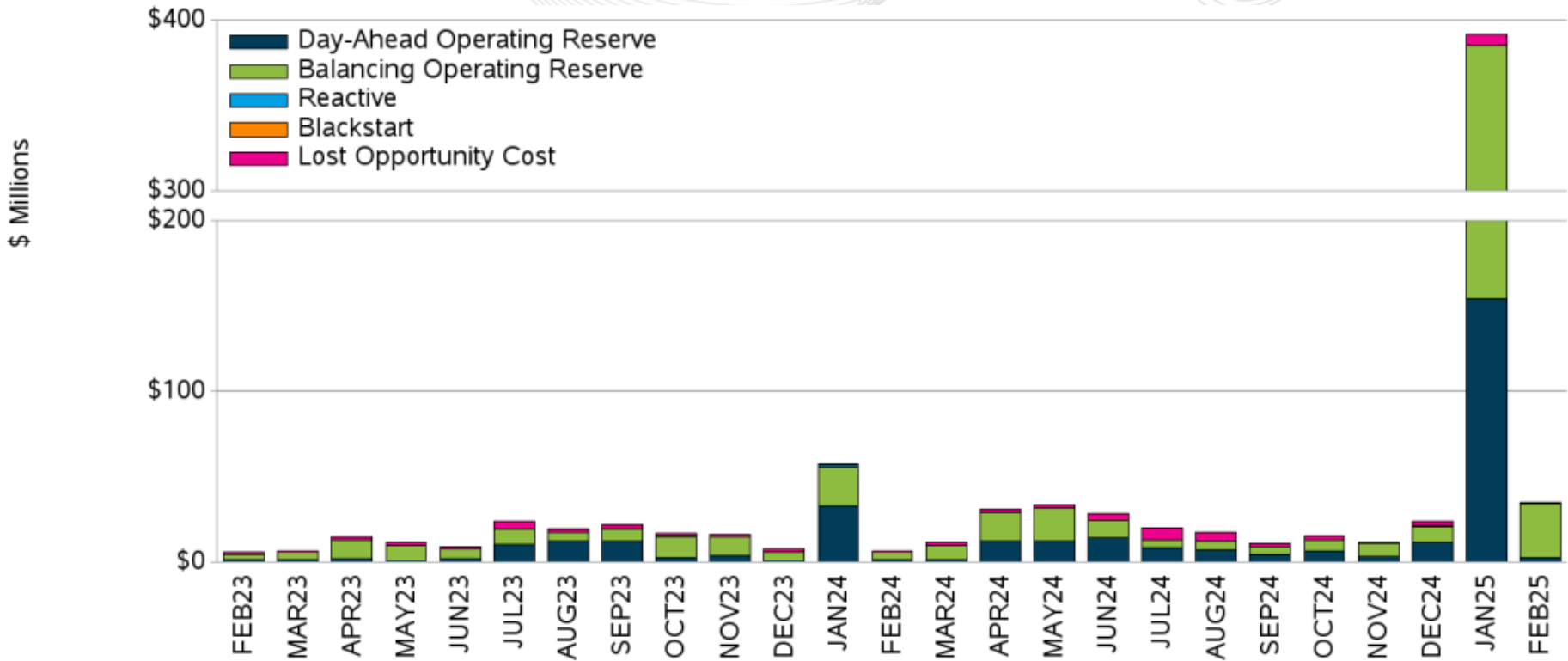
'Other' includes Flywheels, Multiple Fuels, Storage, and Other Renewables

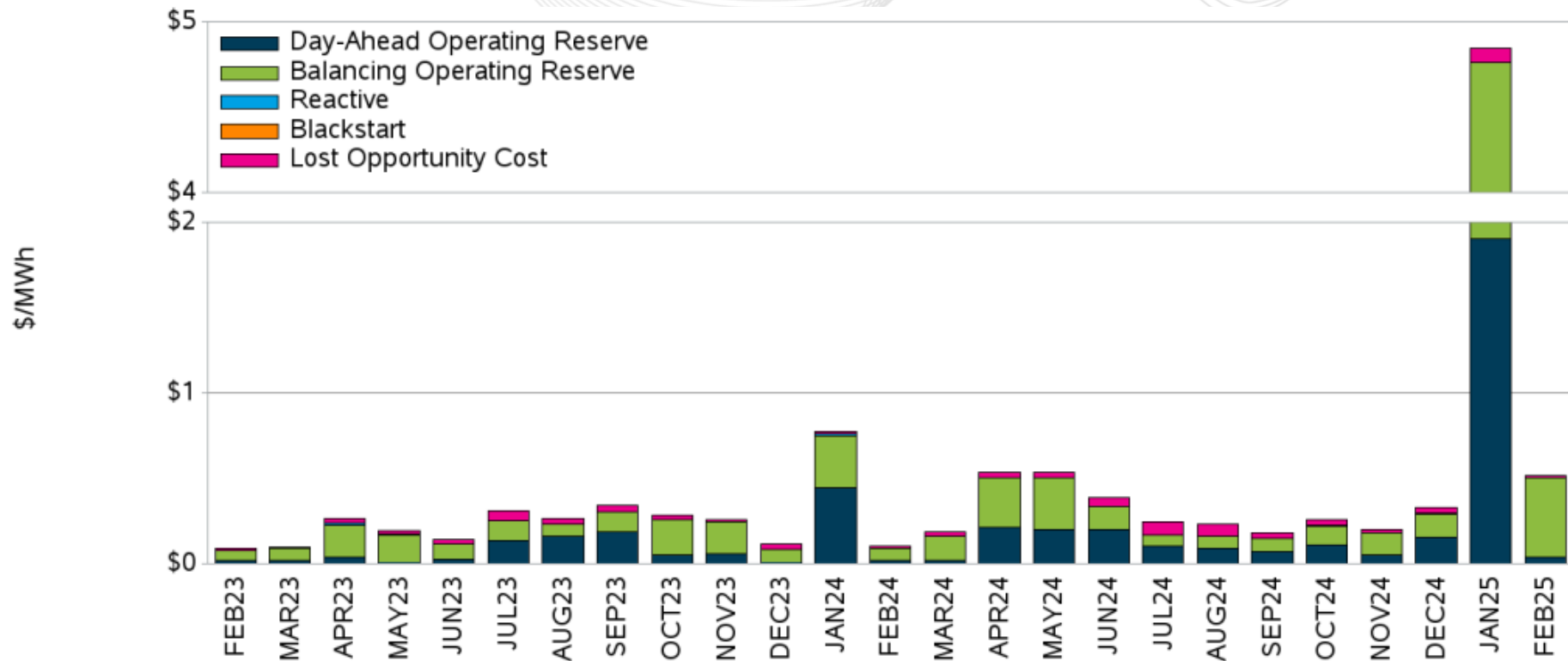
# Percent of Renewable and Clean Generation

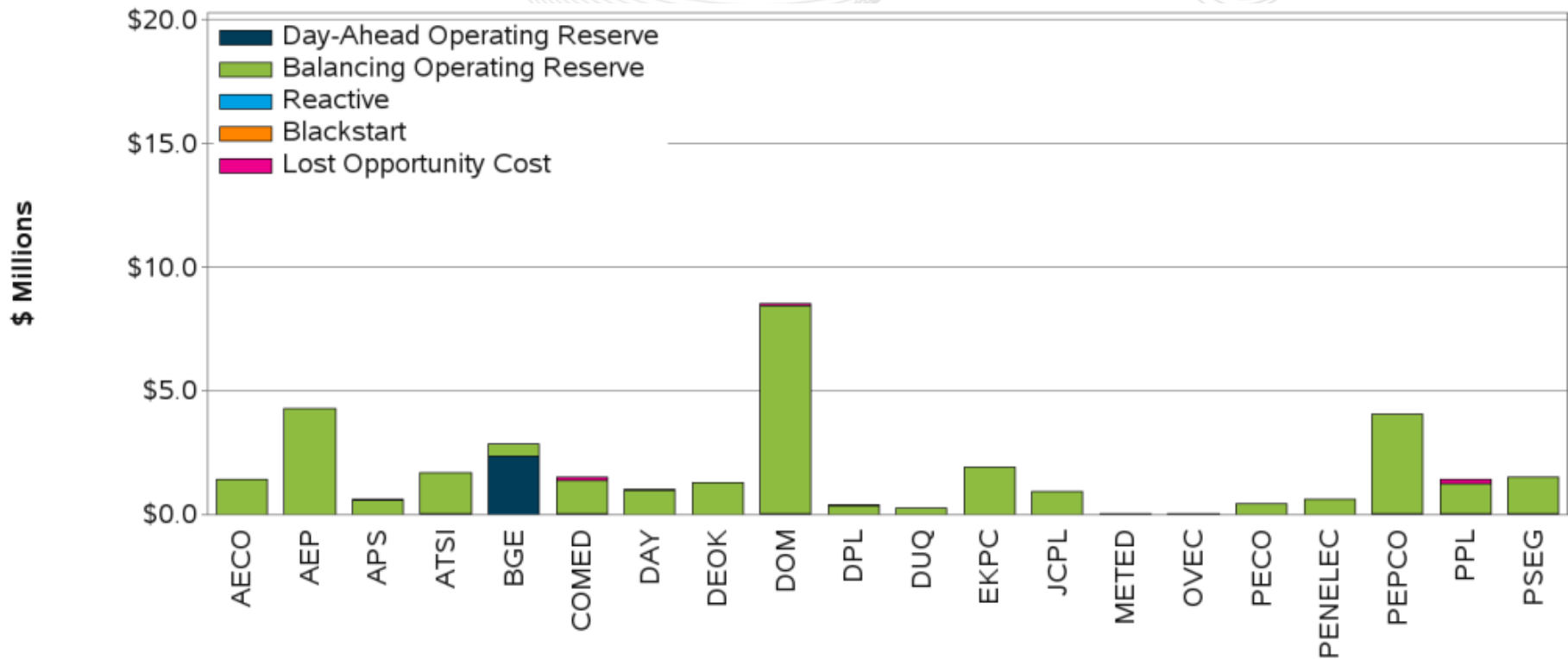


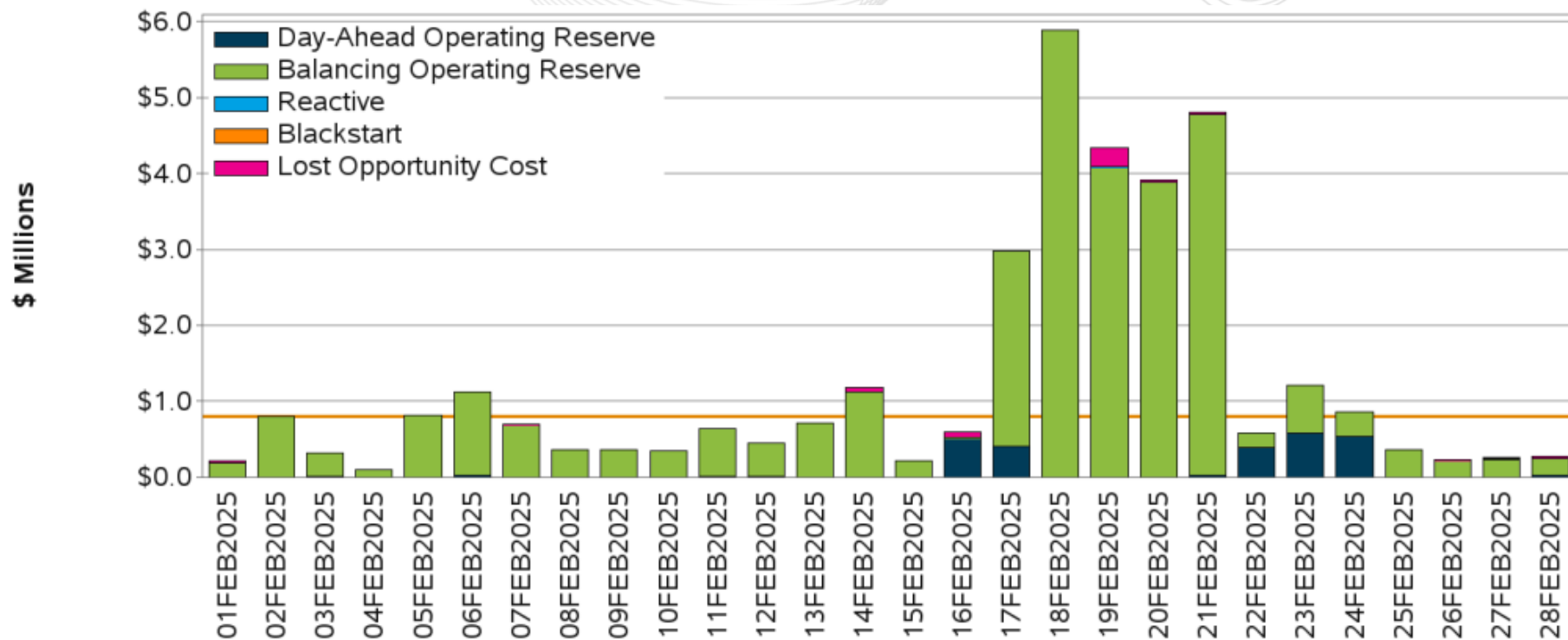
'Renewable' includes Wind, Solar, Hydro, and Other Renewables. 'Clean' includes Renewable and Nuclear.

# Operating Reserve (Uplift)



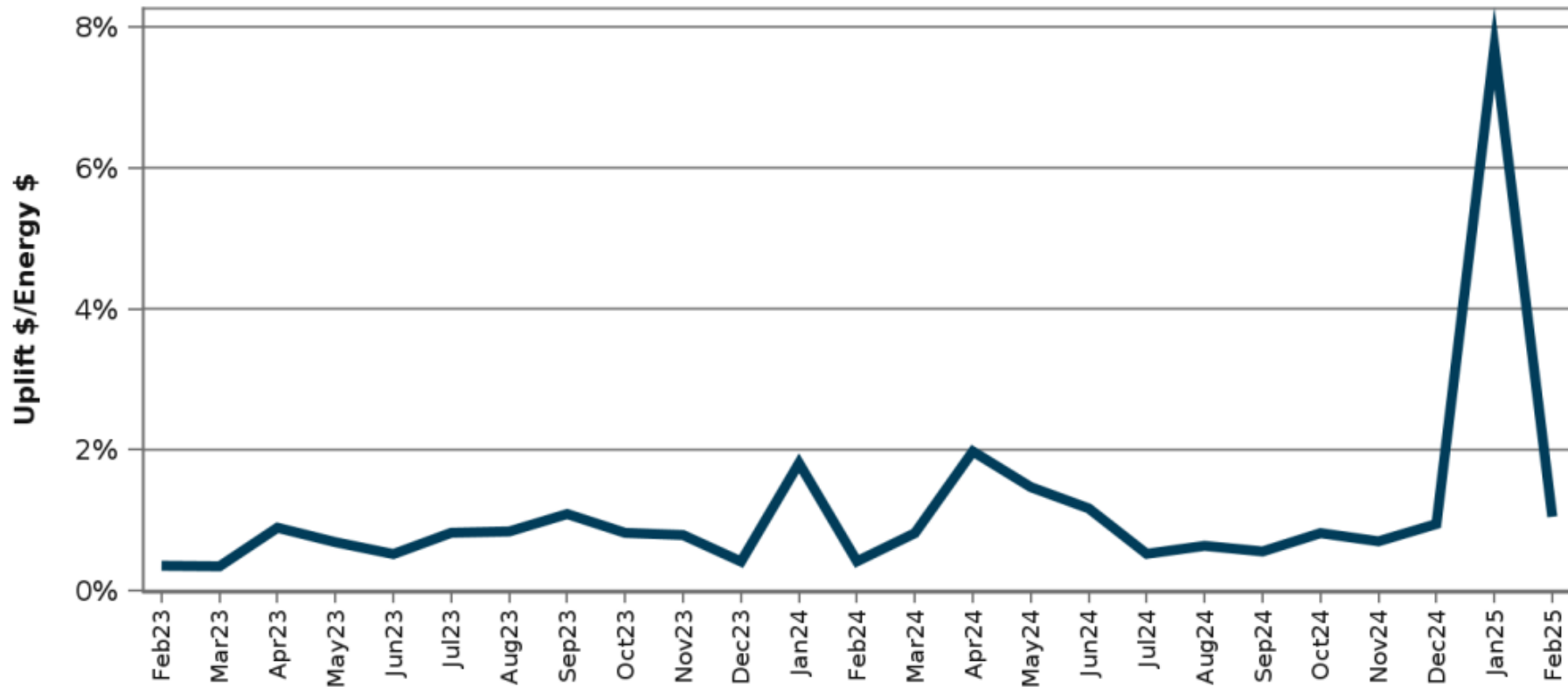




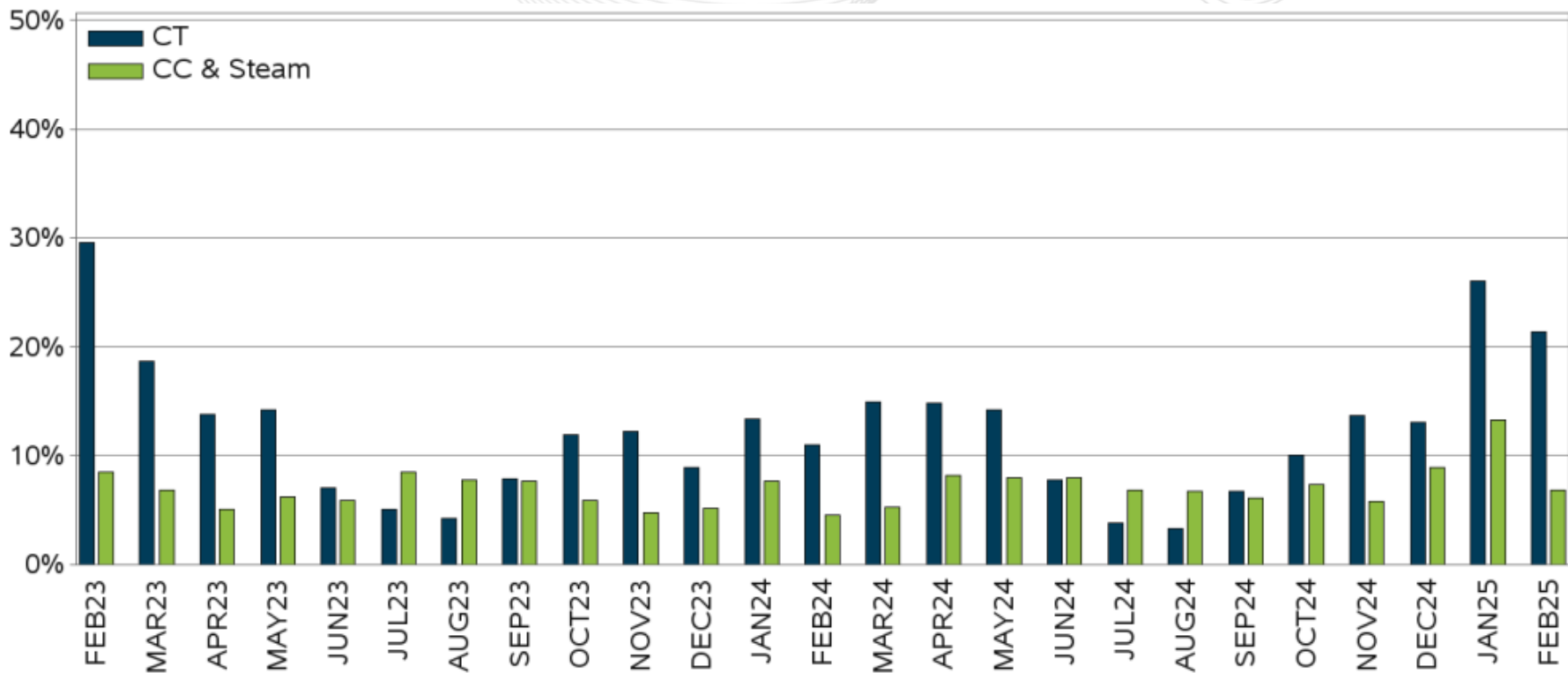




- In February, uplift exceeded \$800,000 on nine days -
- Contributing factors to uplift were:
  - 2/6 and 2/14 - CTs that ran longer than expected for Load.
  - 2/17 to 2/19 - Conservative Operations issued, advanced out of market commitments made.
  - 2/20 and 2/21 - Some units were committed by Dispatch in Real Time (for expected higher loads) and others for Transmission that did not materialize in real time.
  - 2/23 - Units committed for Transmission DA, which caused the DA Operating Reserve.
  - 2/24 - Units committed for Transmission DA, which caused the DA Operating Reserve.
- More information on Uplift can be found on the PJM website at [Drivers of Uplift](#)

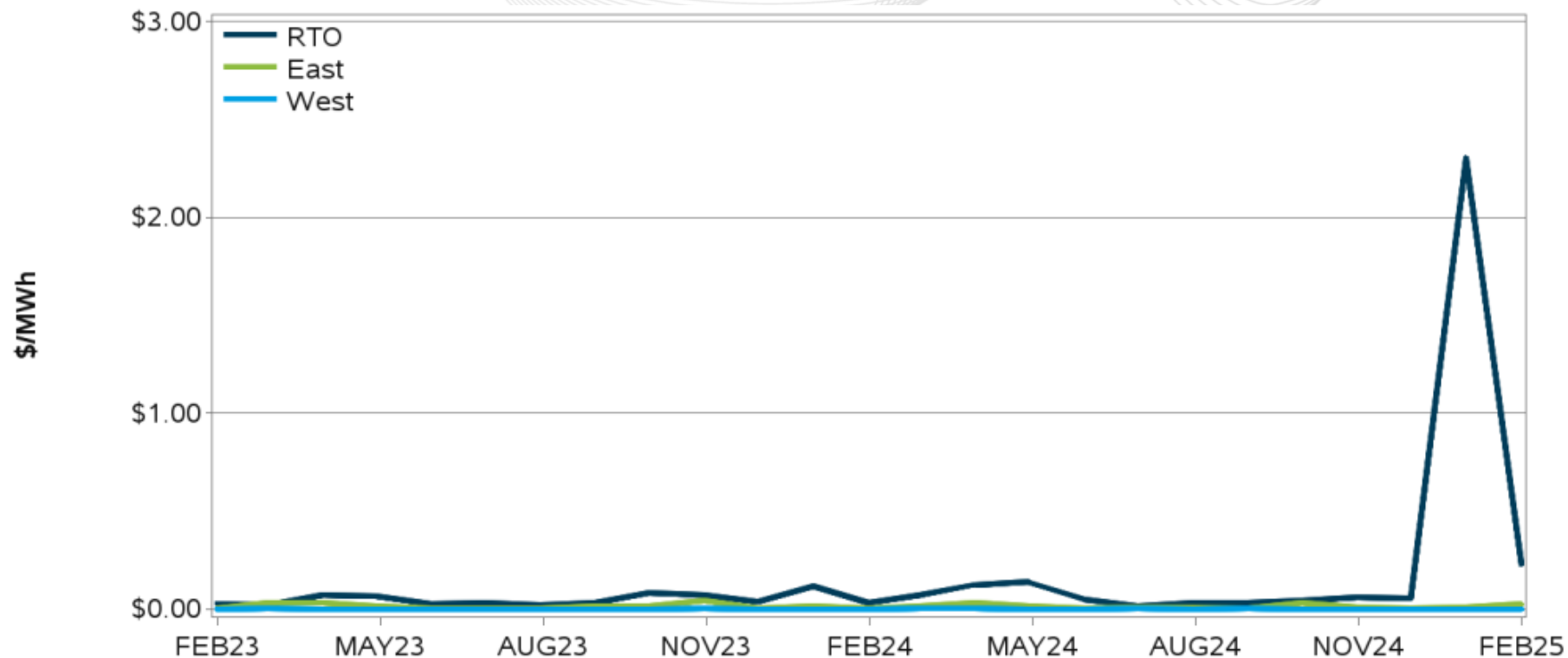


## Percent of Total CT, CC and Steam Hours with LMP < Offer

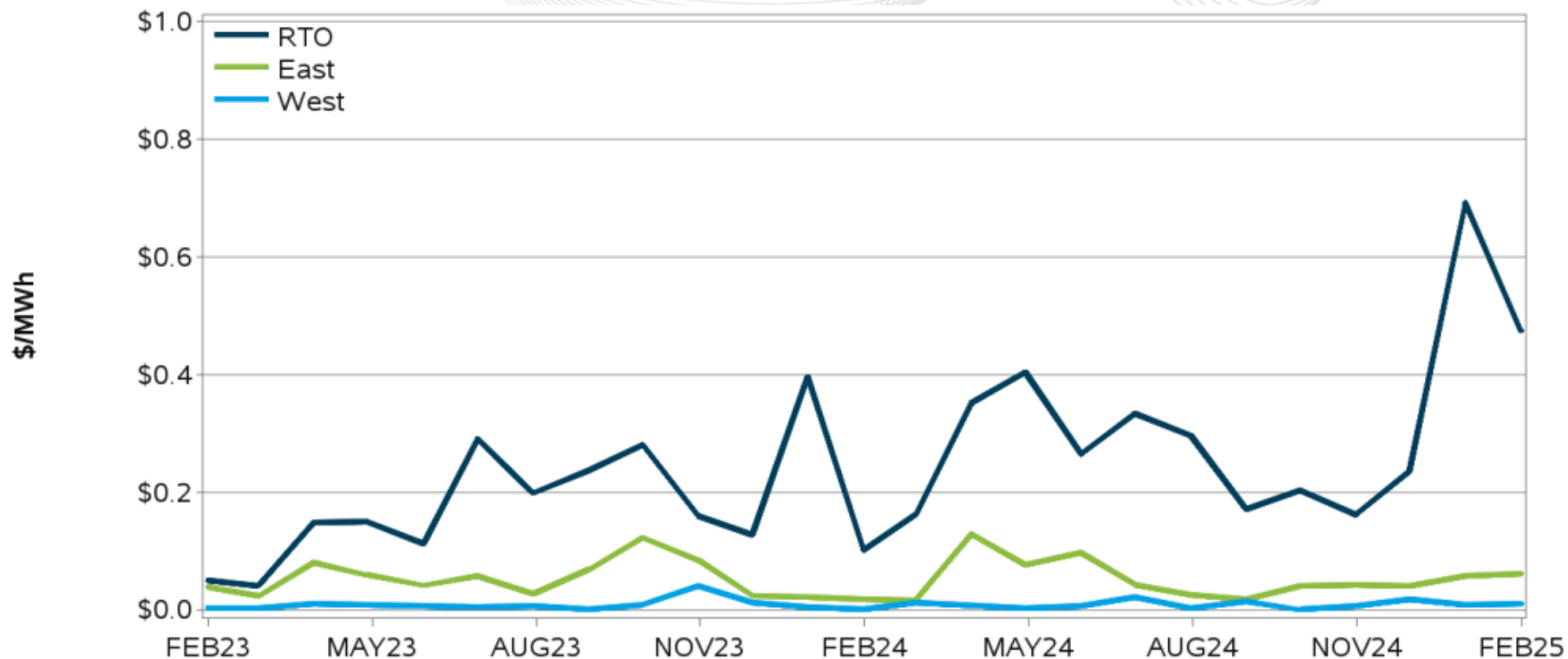


- Beginning in February 2008, the daily Balancing Operating Reserves (BOR) rate was replaced with six different BOR rates: RTO BOR for Reliability Rate, RTO BOR for Deviations Rate, East BOR for Reliability Rate, East BOR for Deviations Rate, West BOR for Reliability Rate, West BOR for Deviations Rate.
- 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.

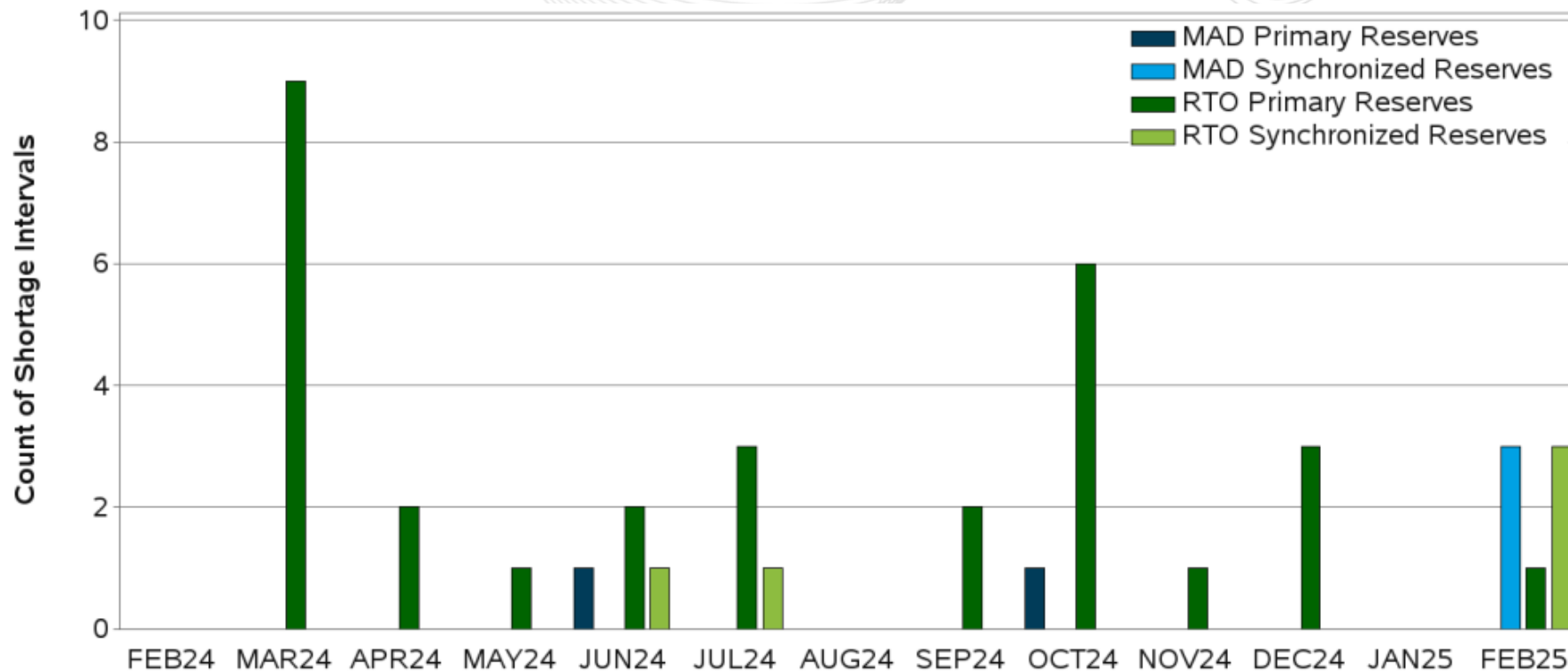
# Reliability Balancing Operating Reserve Rates



# Deviations Balancing Operating Reserve Rates



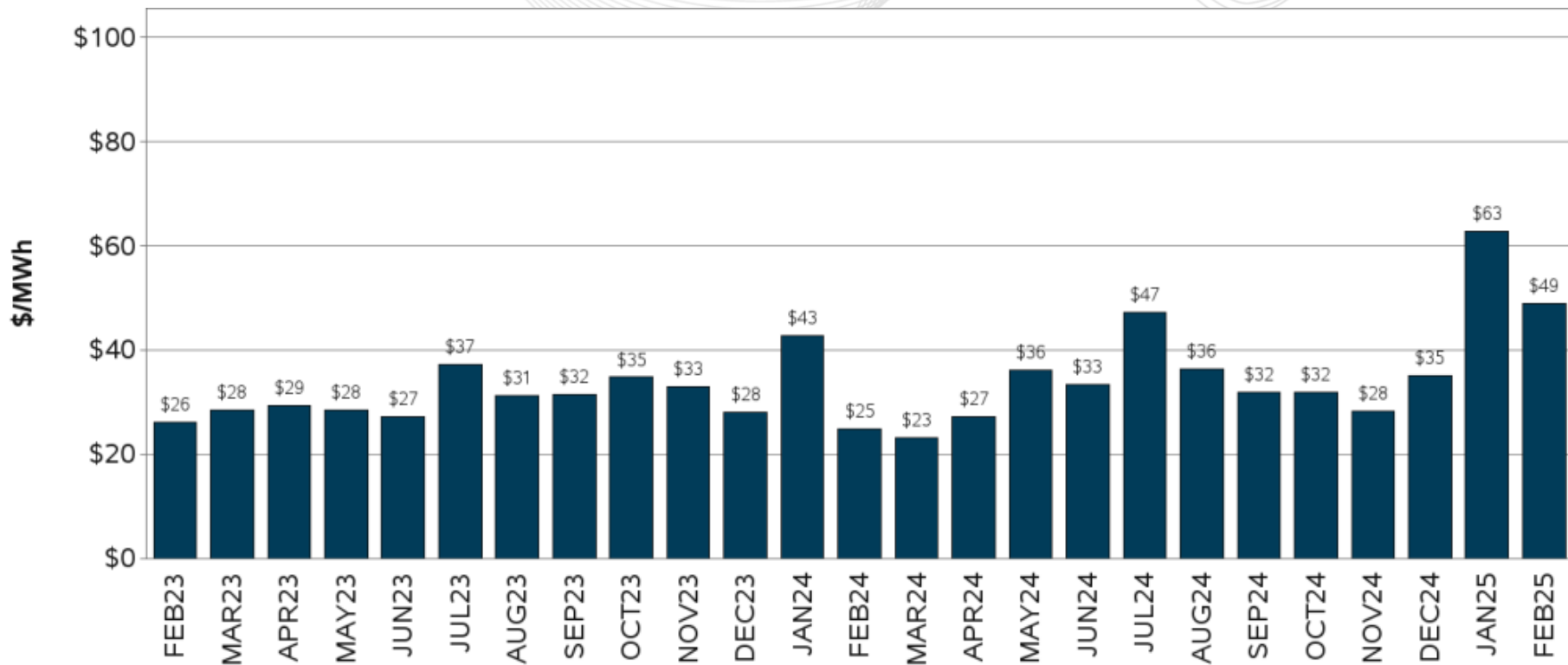
# Energy Market LMP Summary



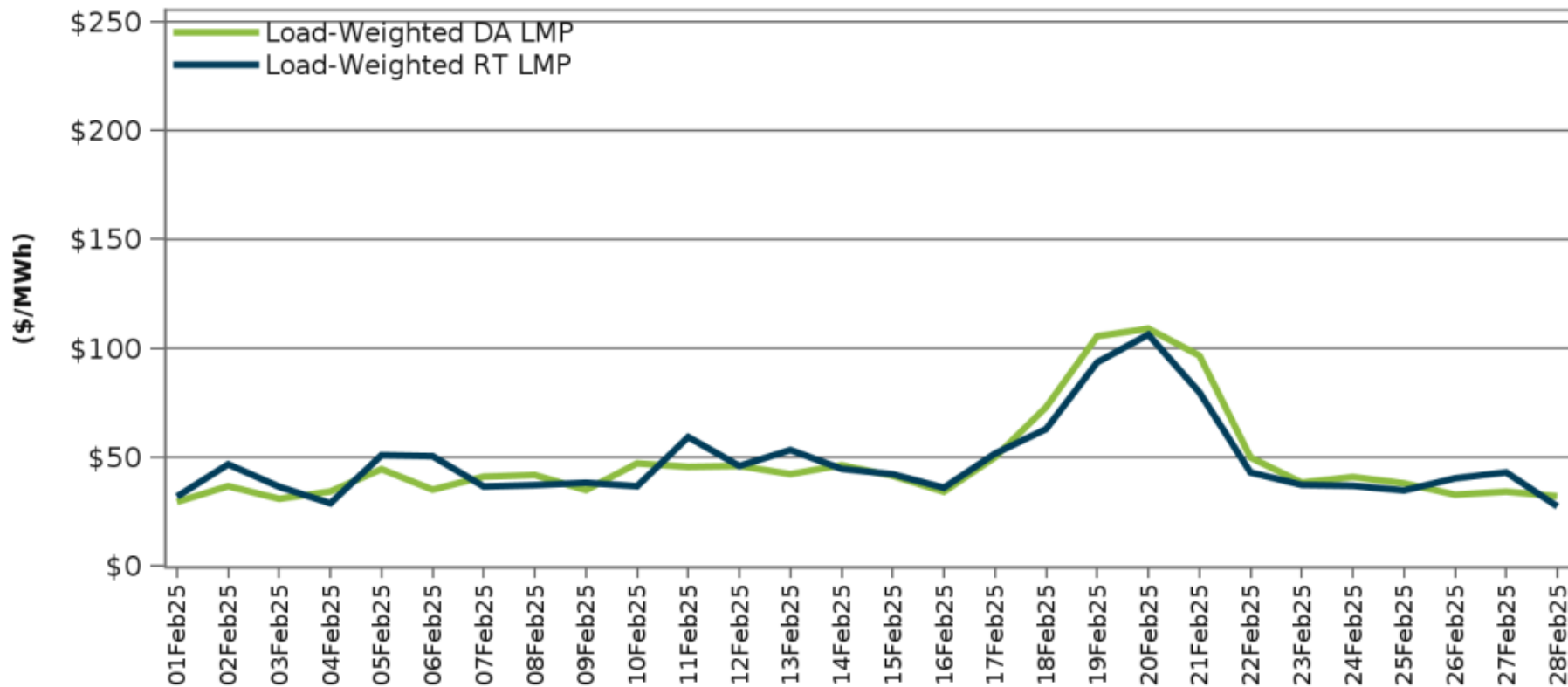
[Information on constraints and shadow prices can be found here](#)



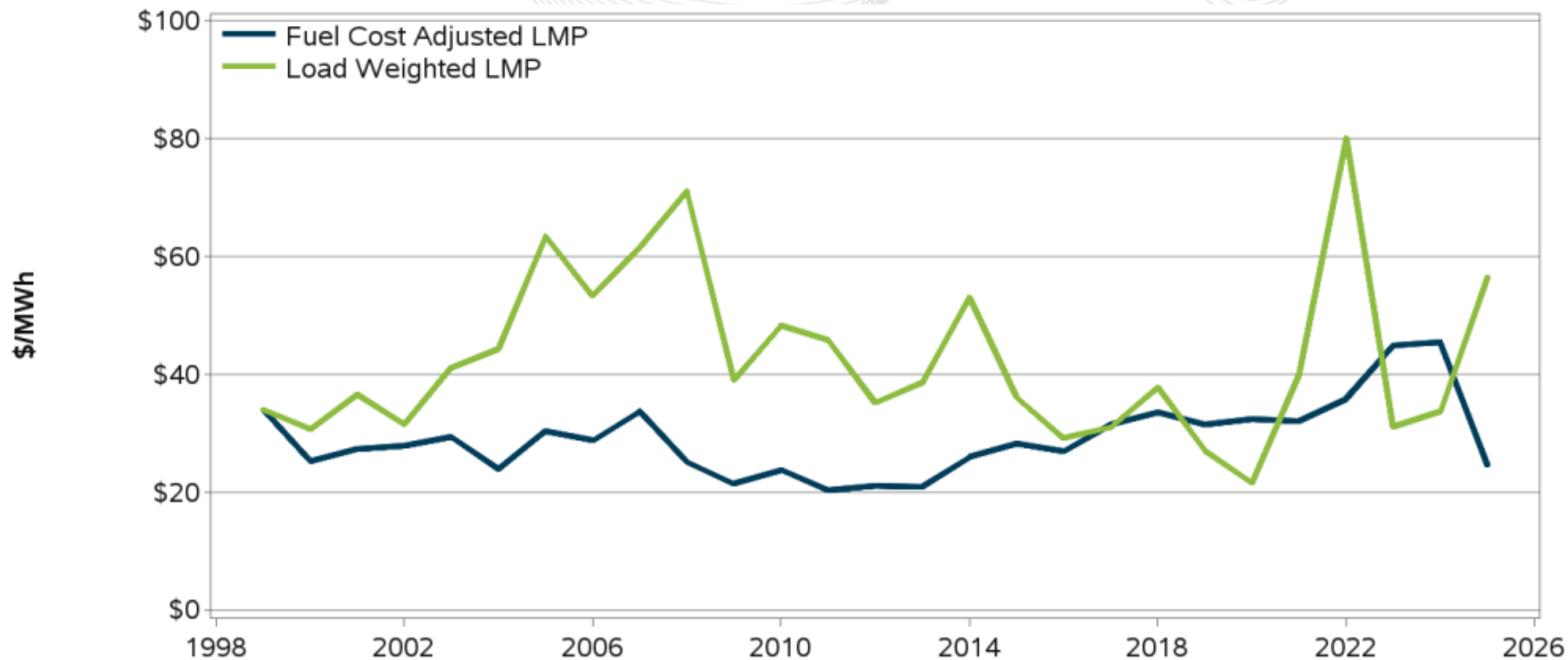
# Monthly Load-Weighted Average Real-time LMP

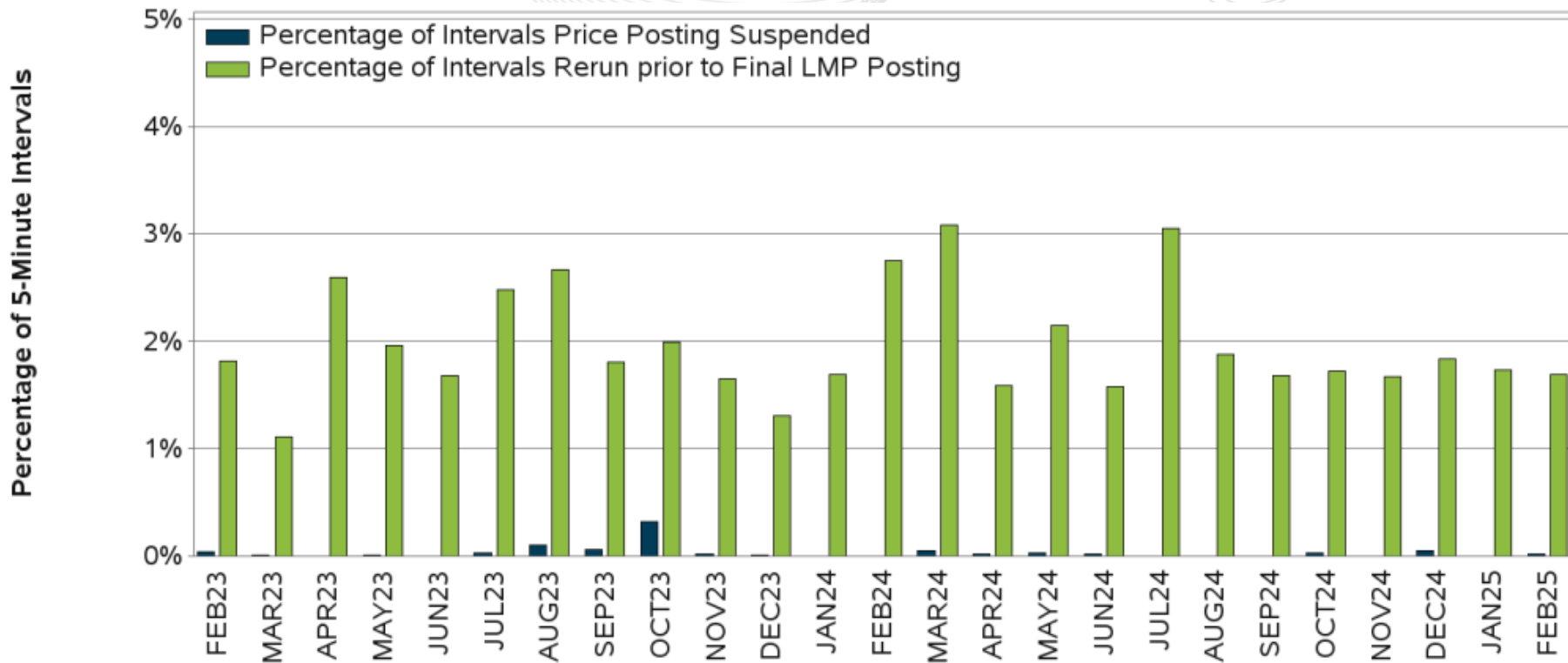


# Daily Load-Weighted Average DA & RT LMP



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

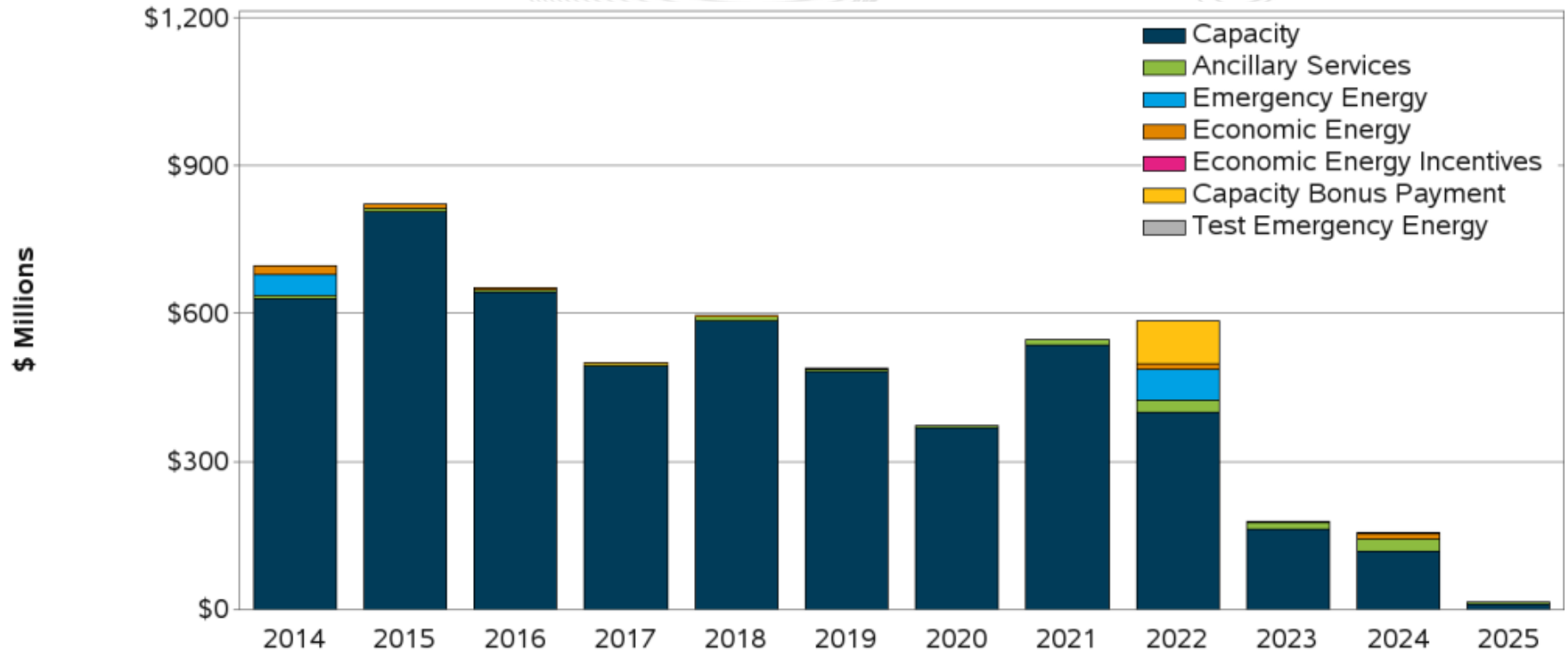


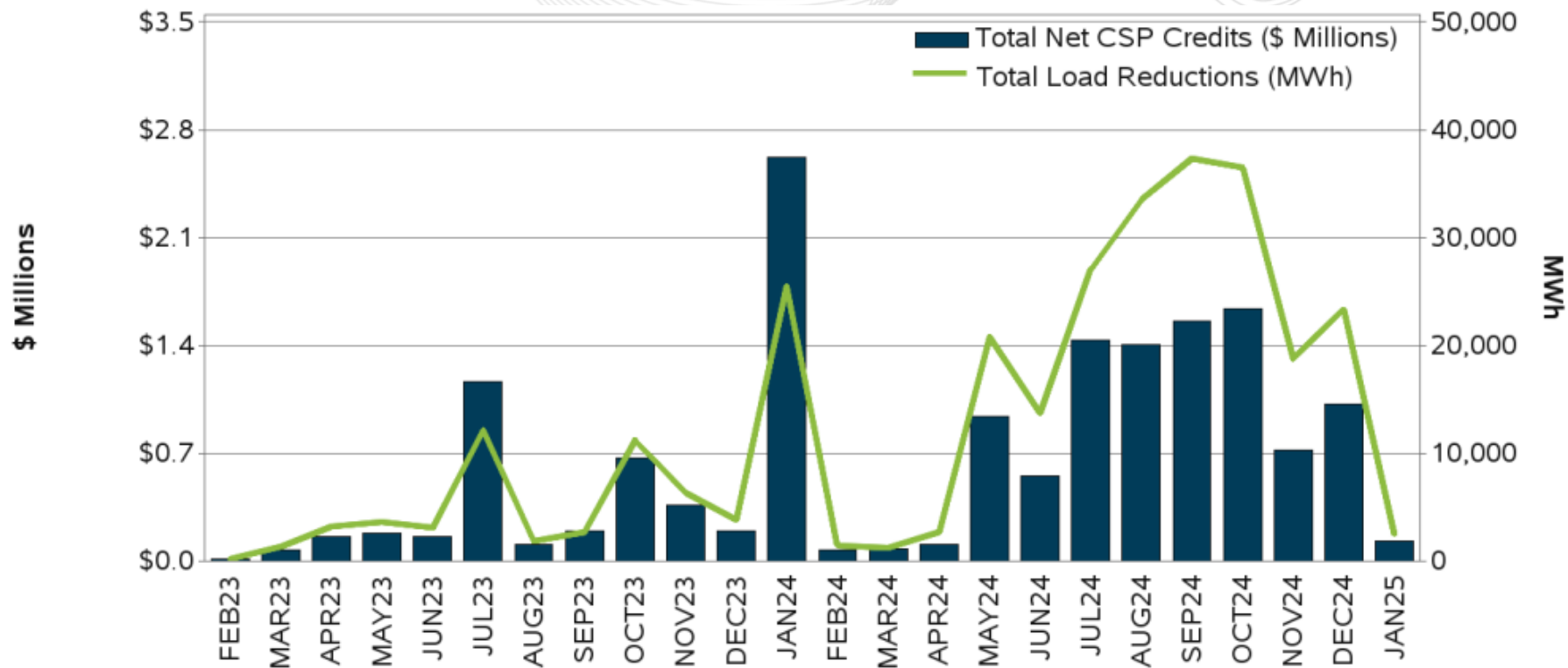


# Energy Market

## Demand Response Summary

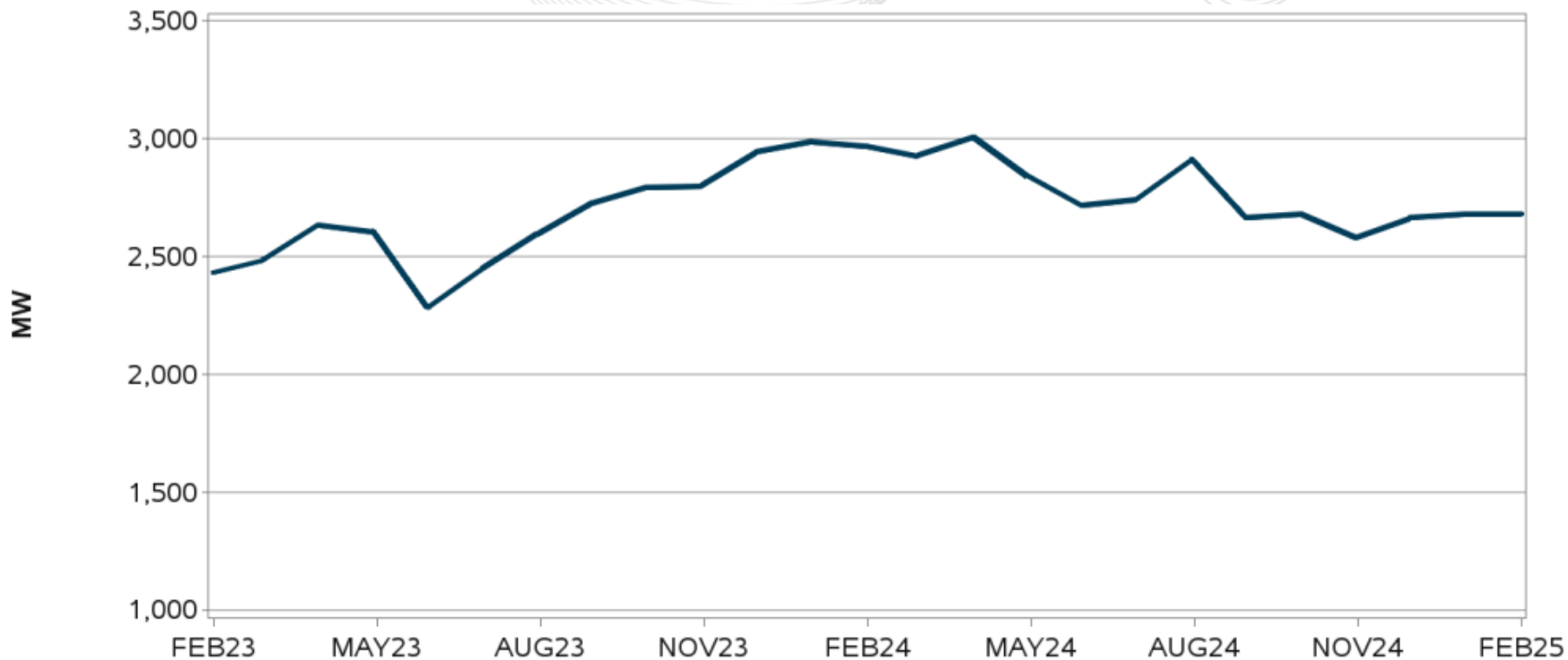
# Demand Side Response Estimated Revenue





\*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



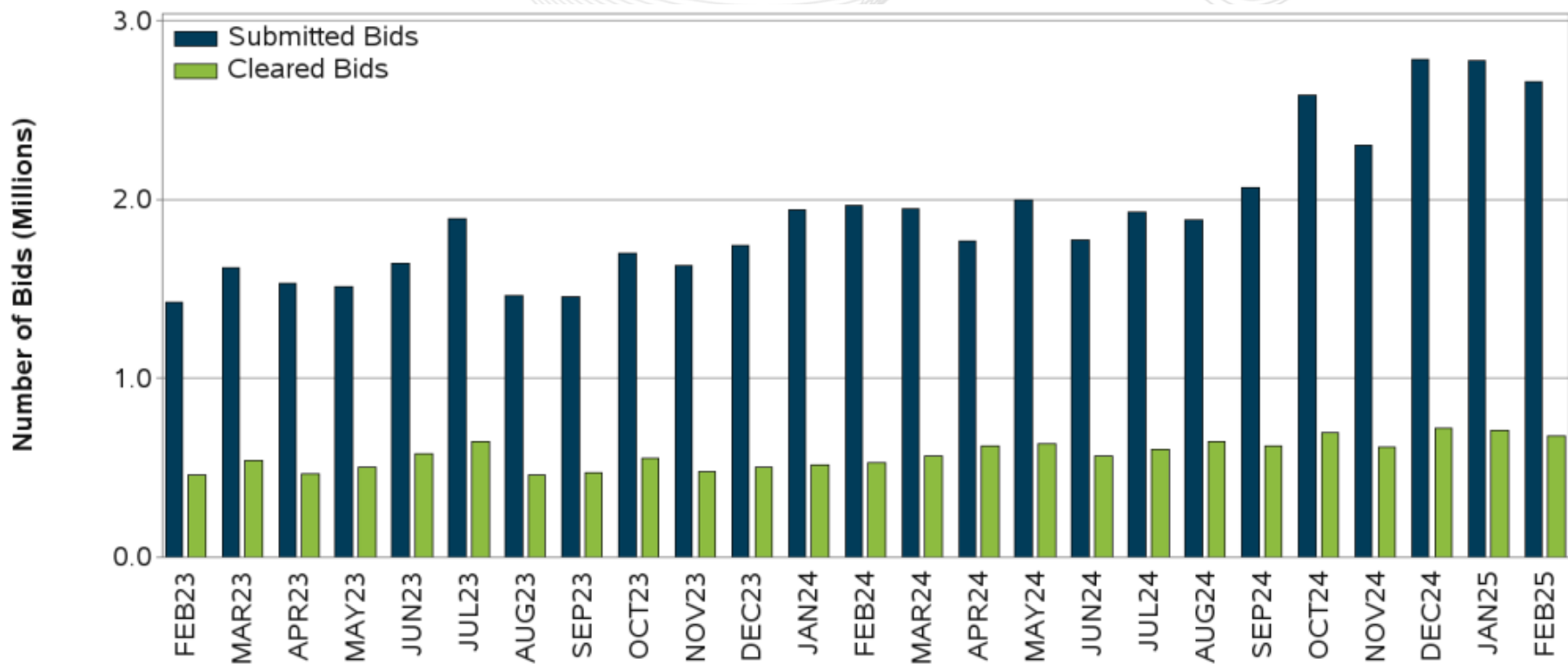


# Energy Market

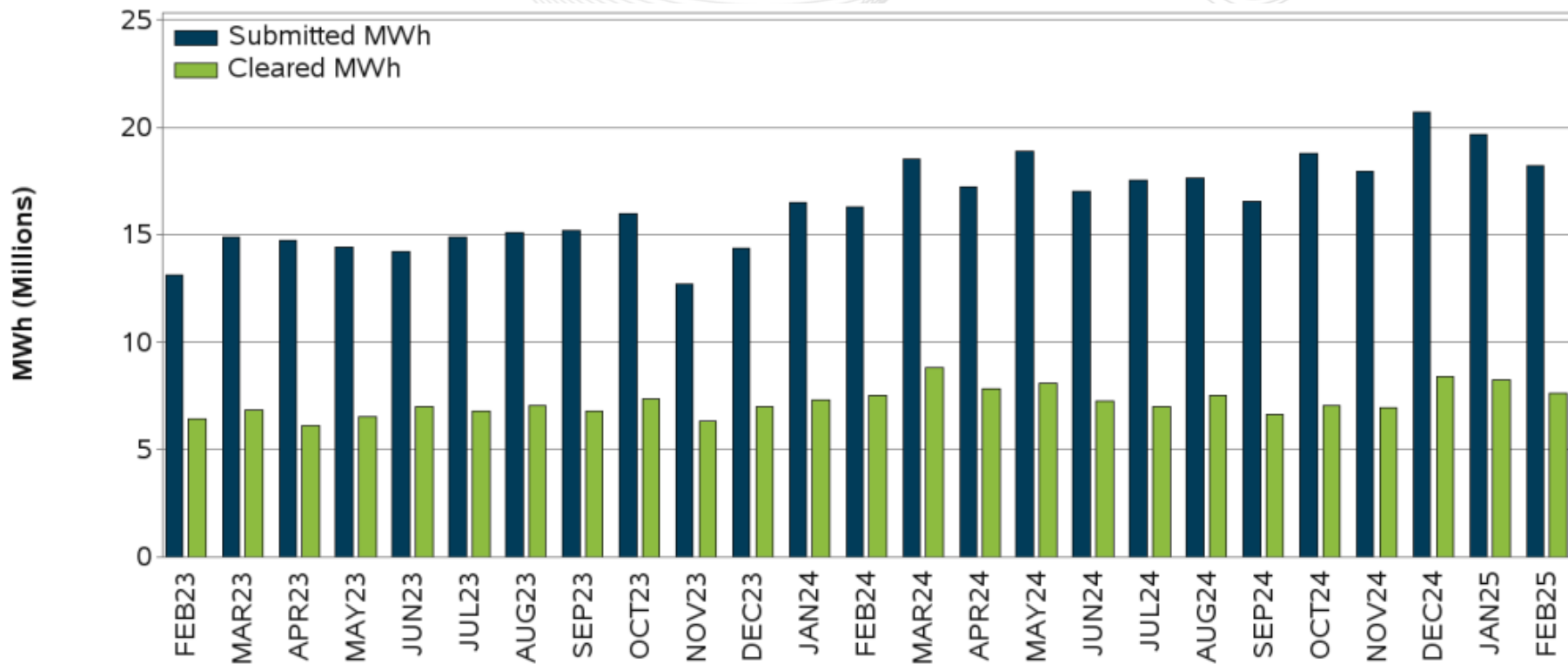
## Virtual Activity Summary

- 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.

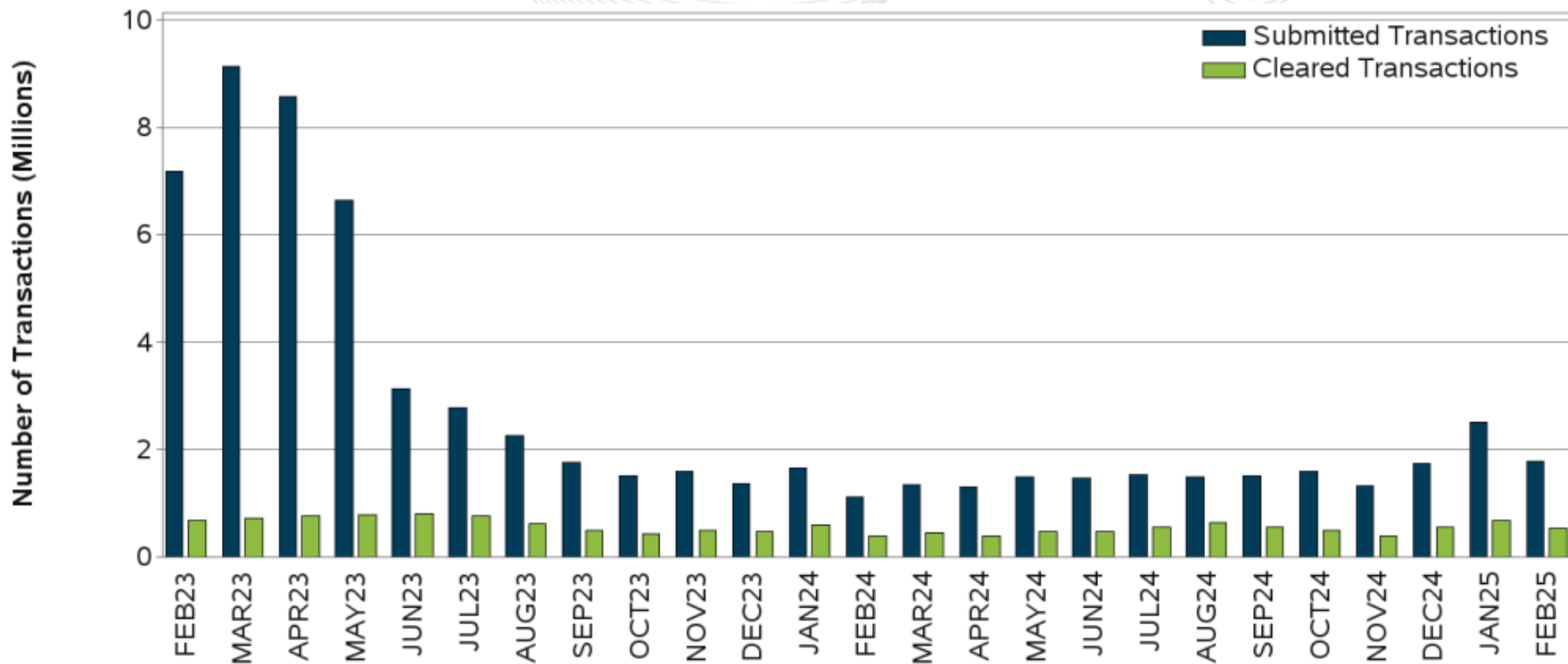
## Virtual Bids (INCs & DEC)s - Total Number



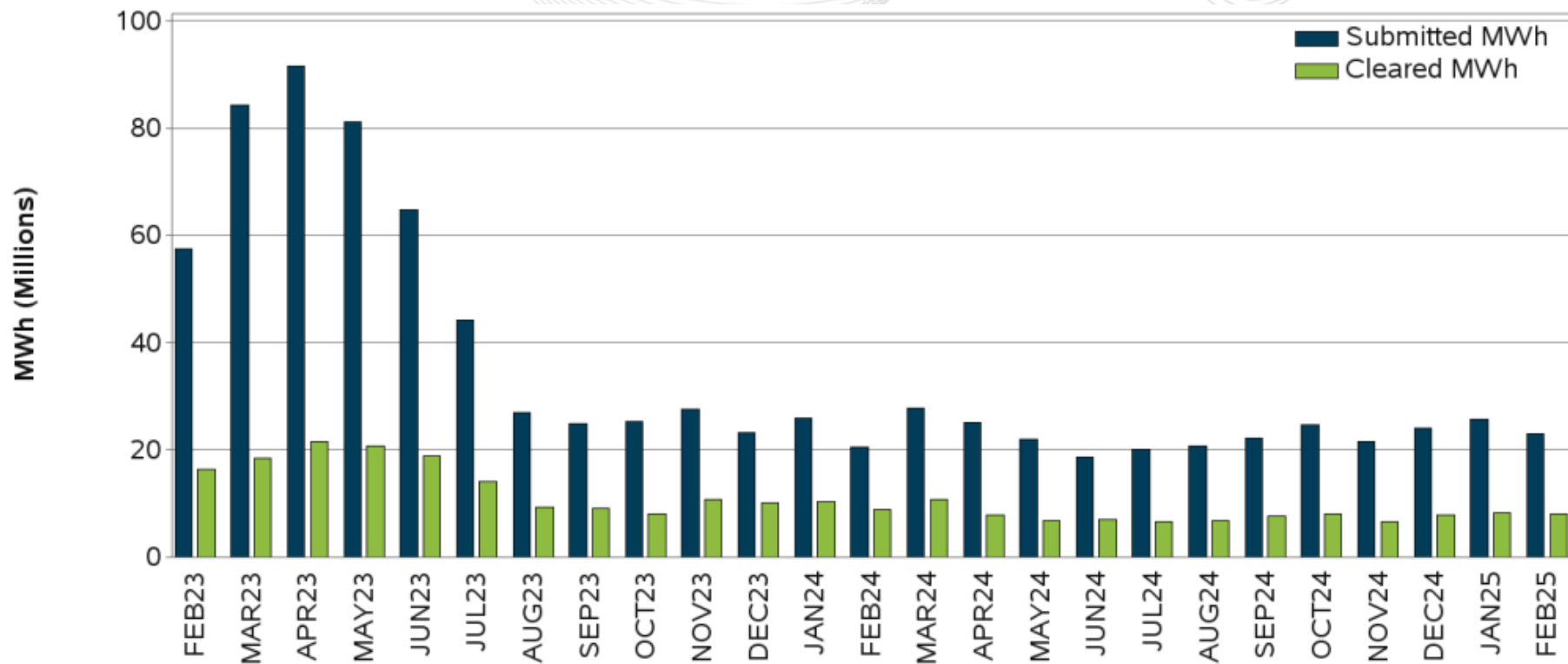
## Virtual Bids (INCs & DEC)s - Total Volume



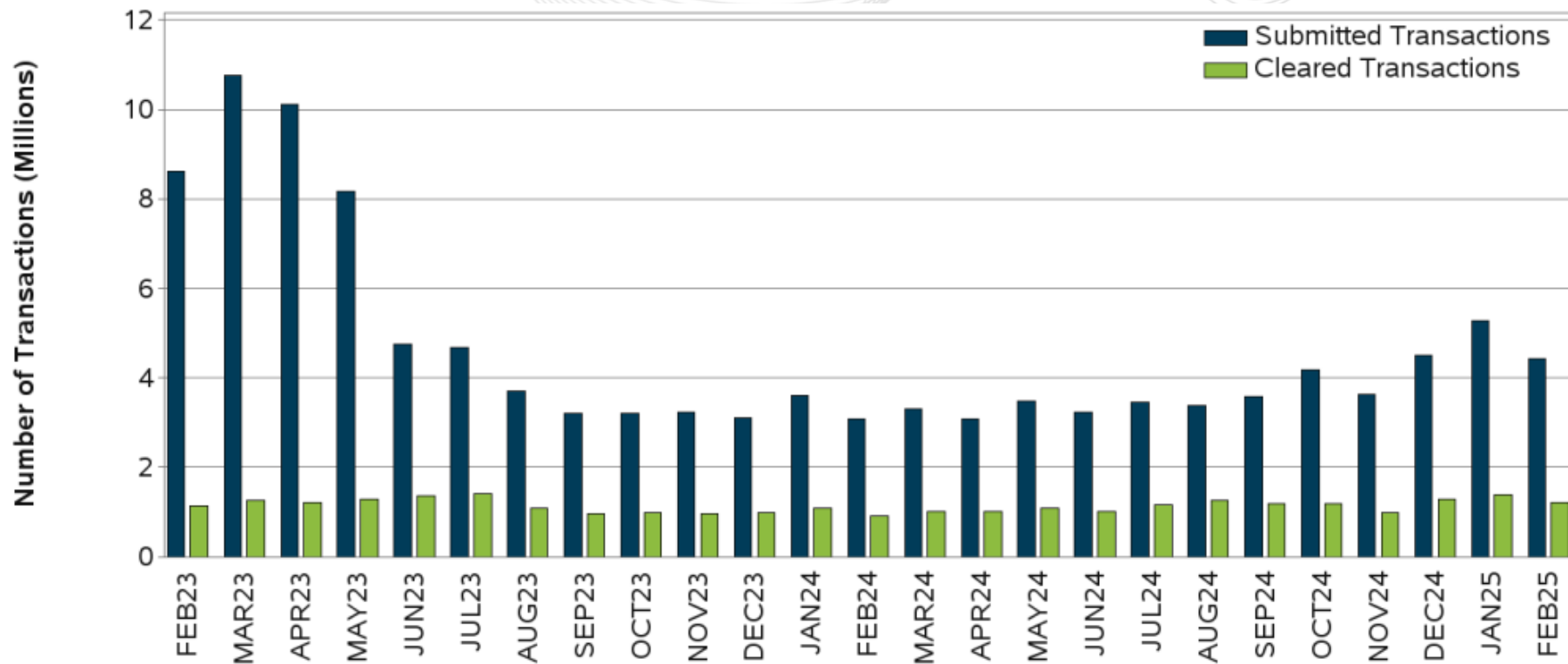
# Up-To-Congestion Transactions - Total Number



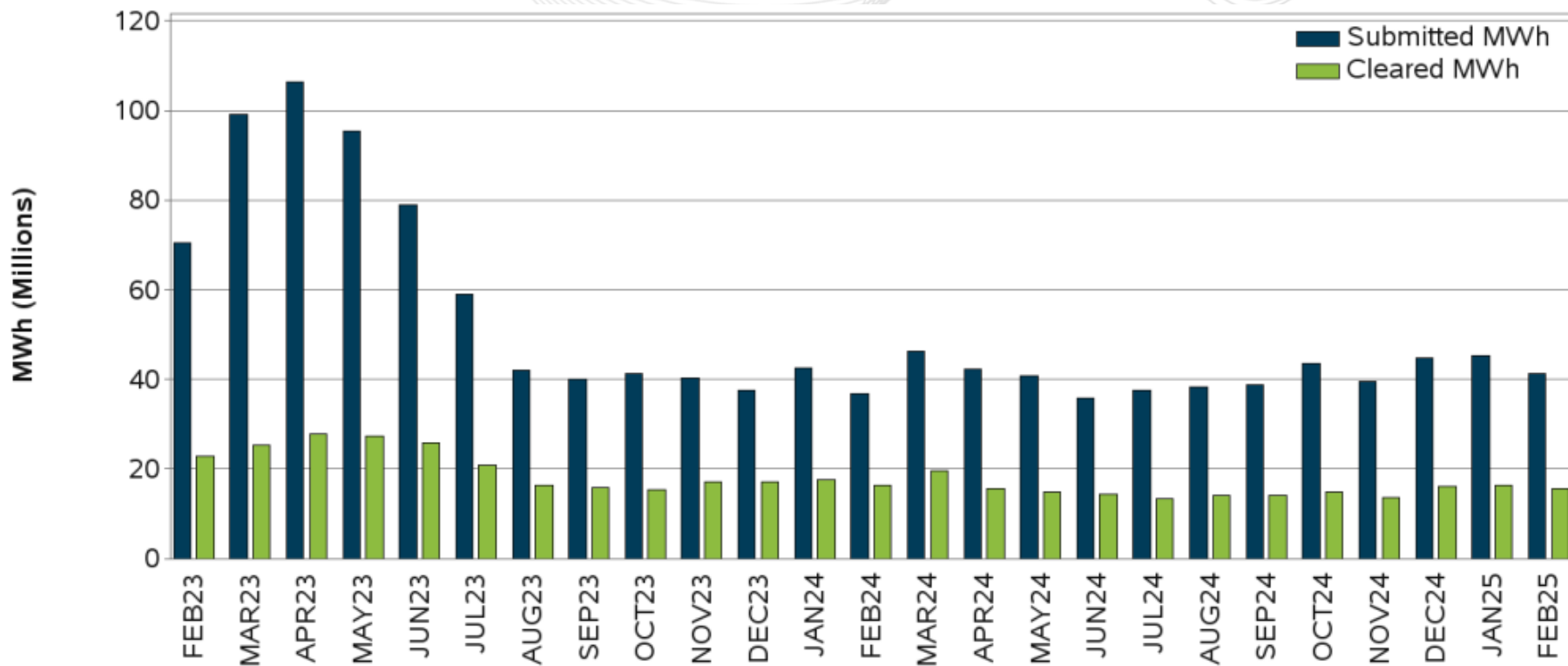
# Up-To-Congestion Transactions - Total Volume



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



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



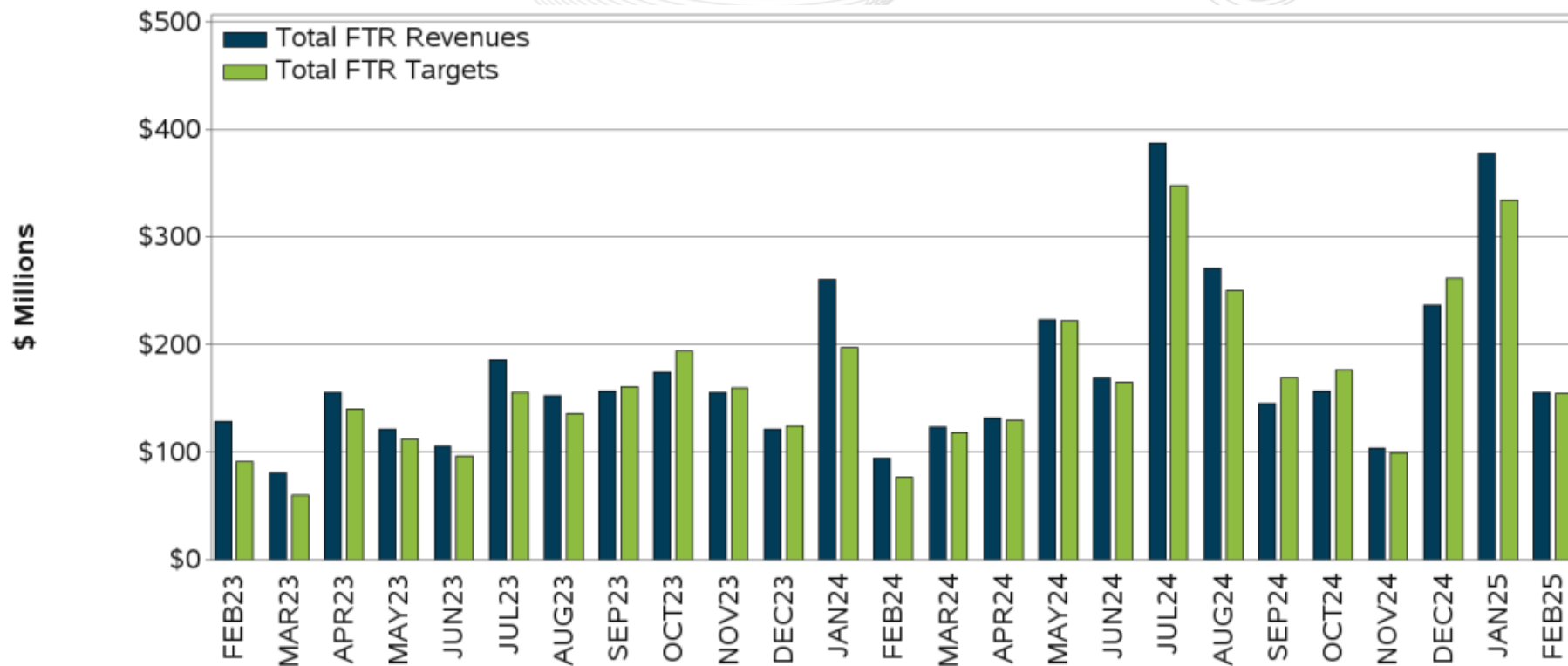


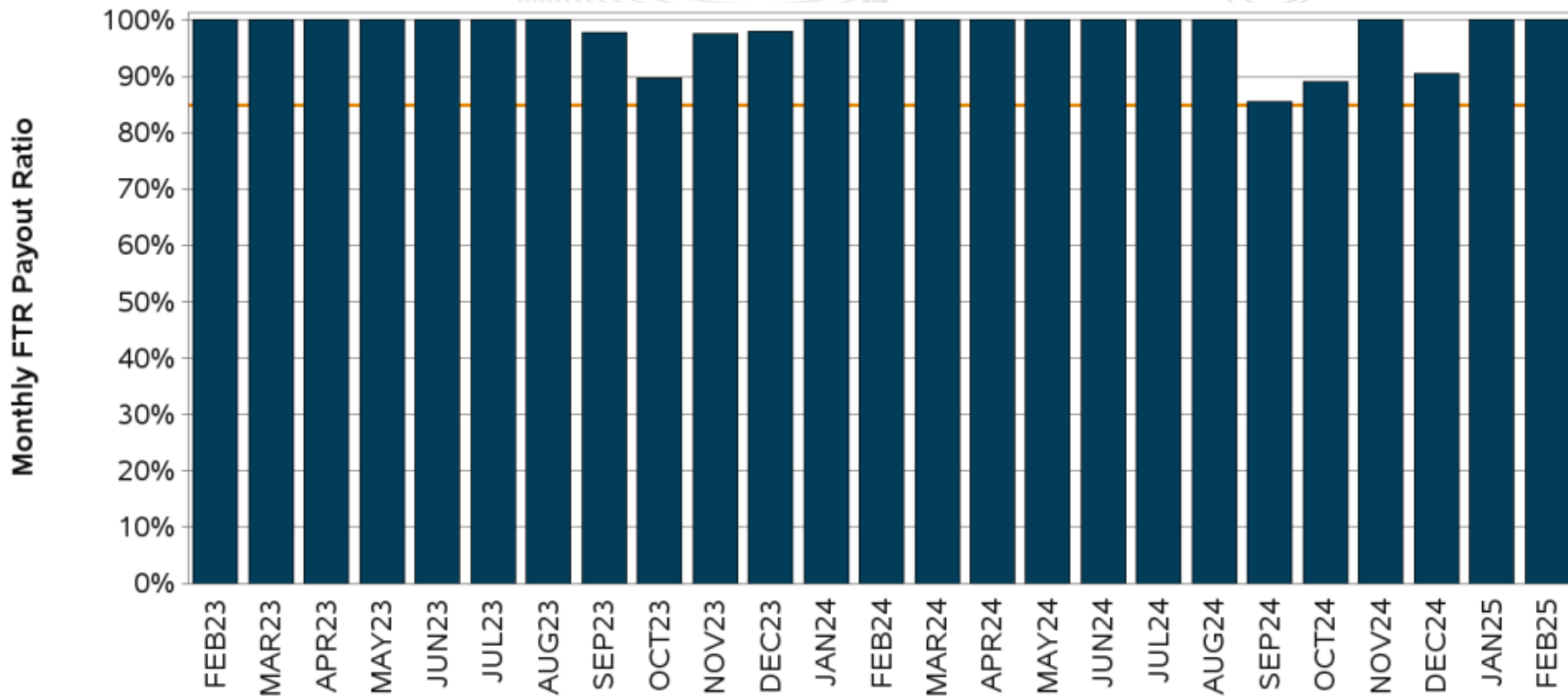
# Energy Market

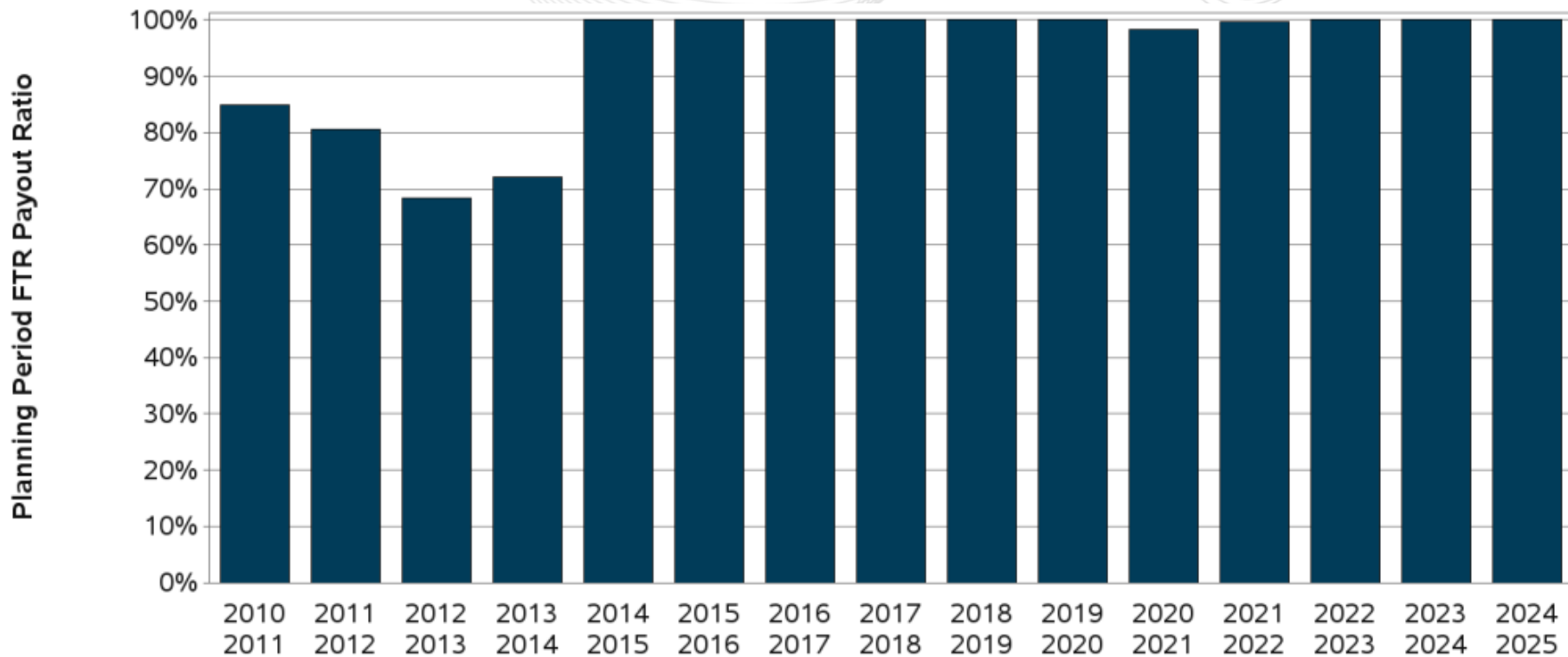
## Congestion and FTR Summary

Period	Surplus / Underfunding	Payout Ratio
February 2025	\$950,839	100%
2025	\$43,994,620	100%
2024/2025	\$44,195,379	100%

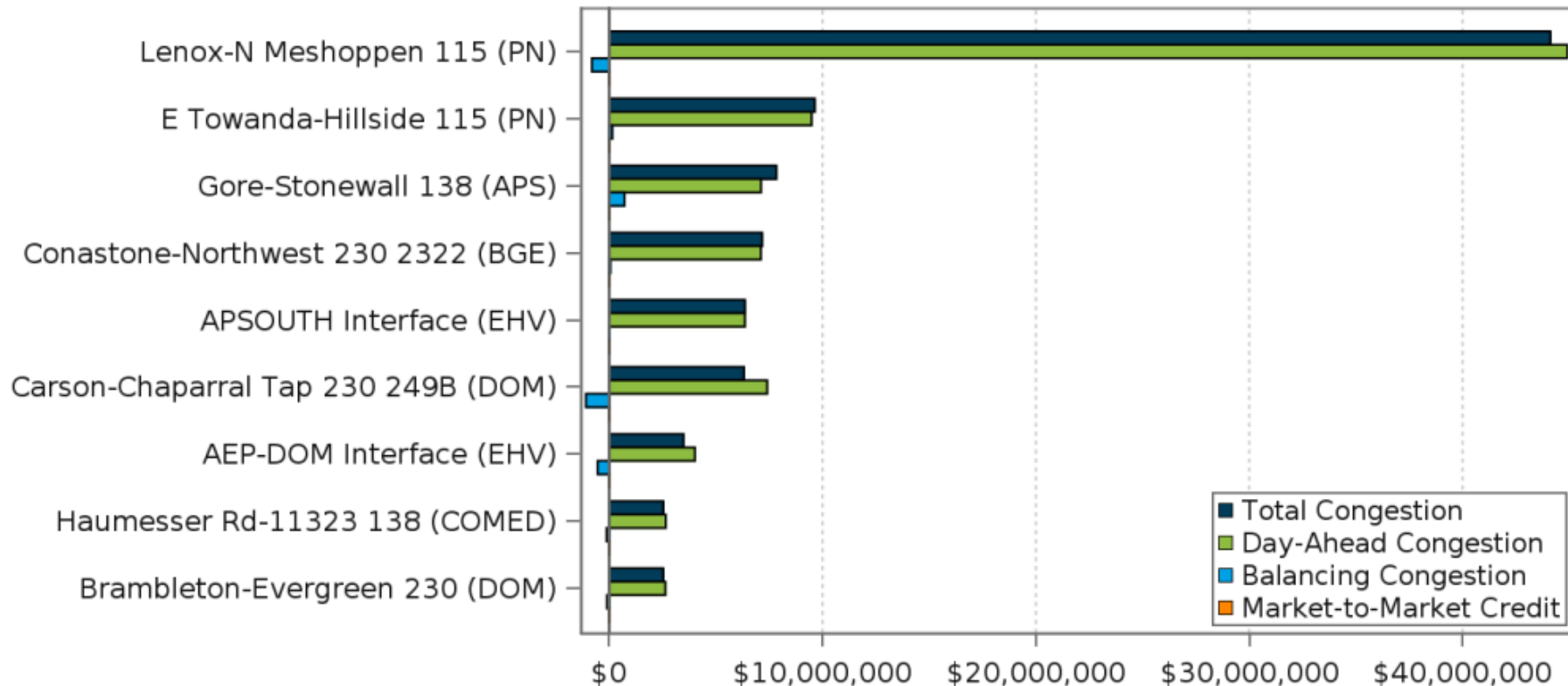
## FTR Revenue vs. FTR Target Allocation





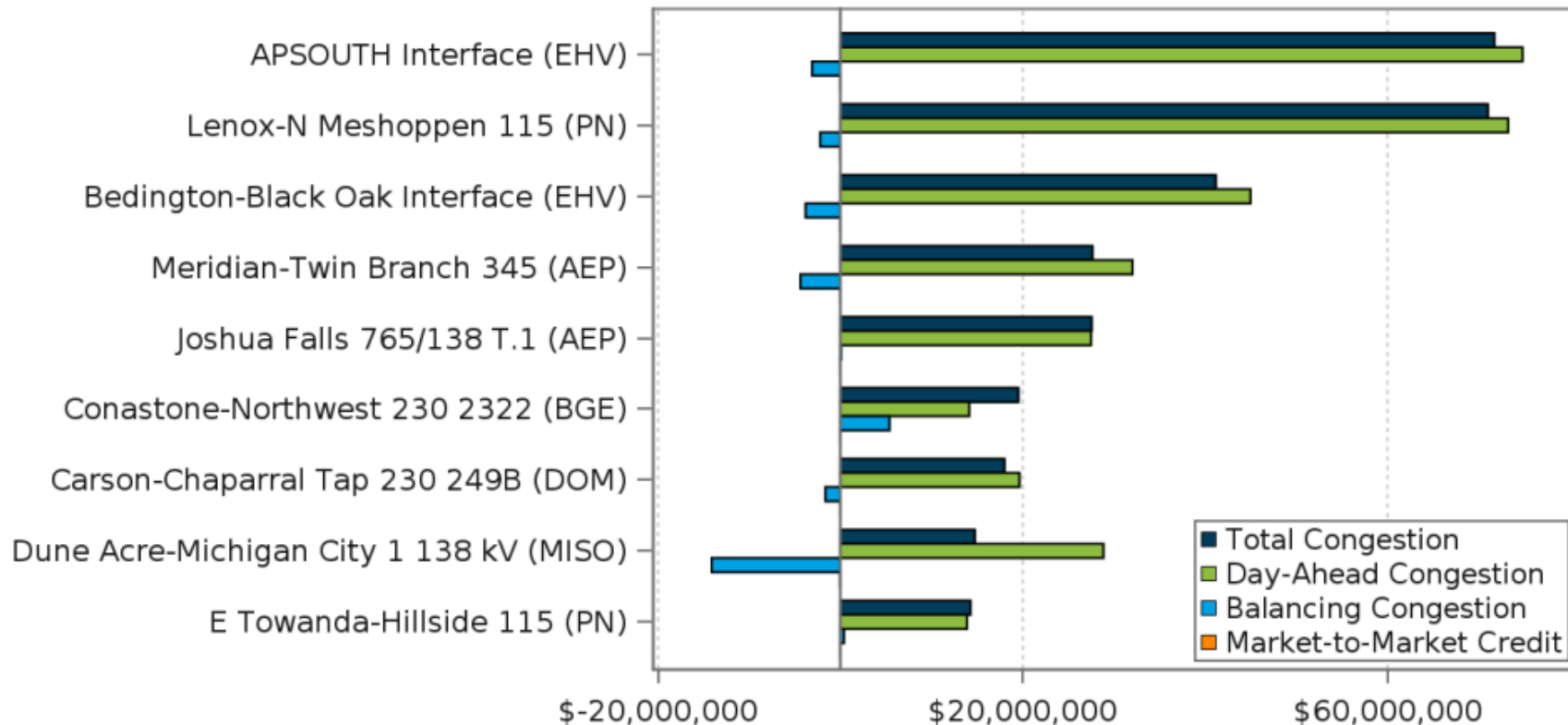


## Ten Most Heavily Congested Transmission Facilities - Overall, February



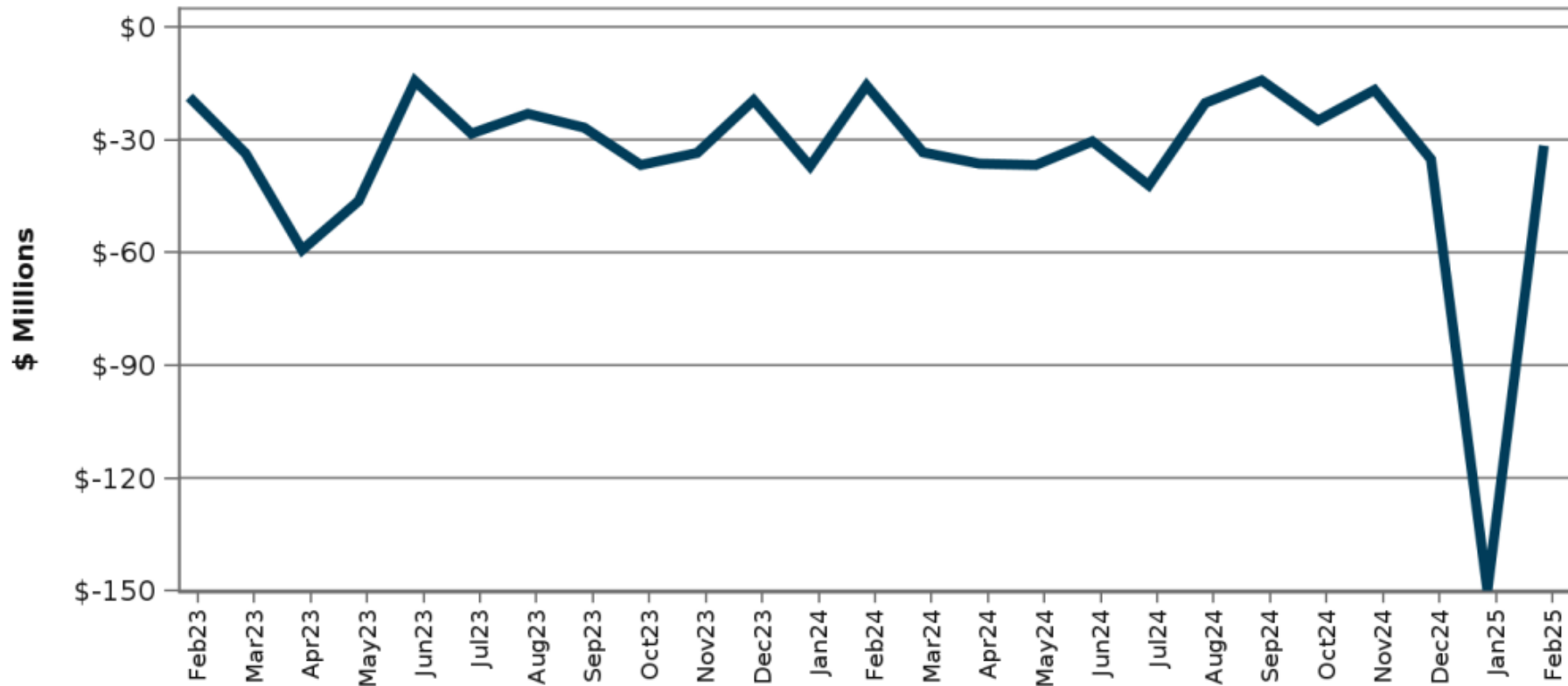
The ten most heavily congested facilities account for 73% of total congestion for February.

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



The ten most heavily congested facilities account for 81% of total congestion for 2025.

## Balancing Congestion Charge Revenues (BLI 2215)

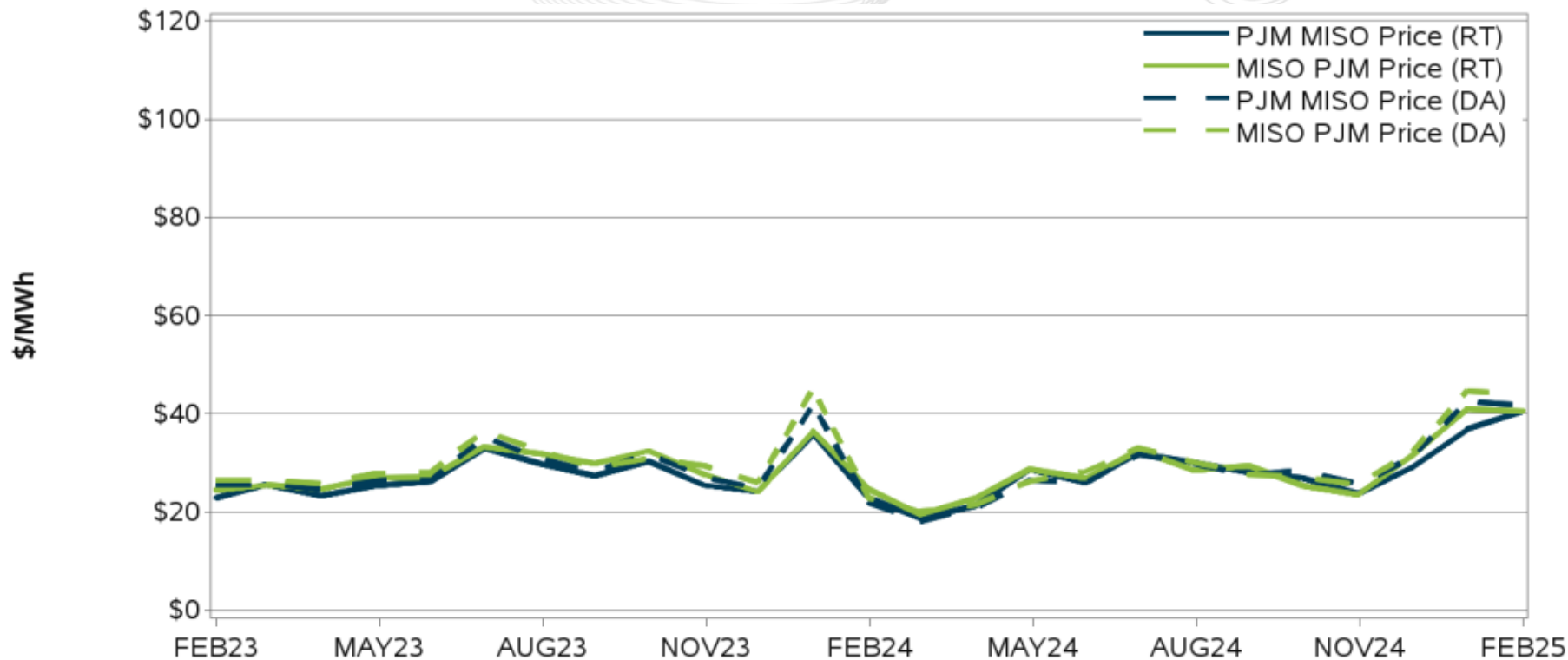




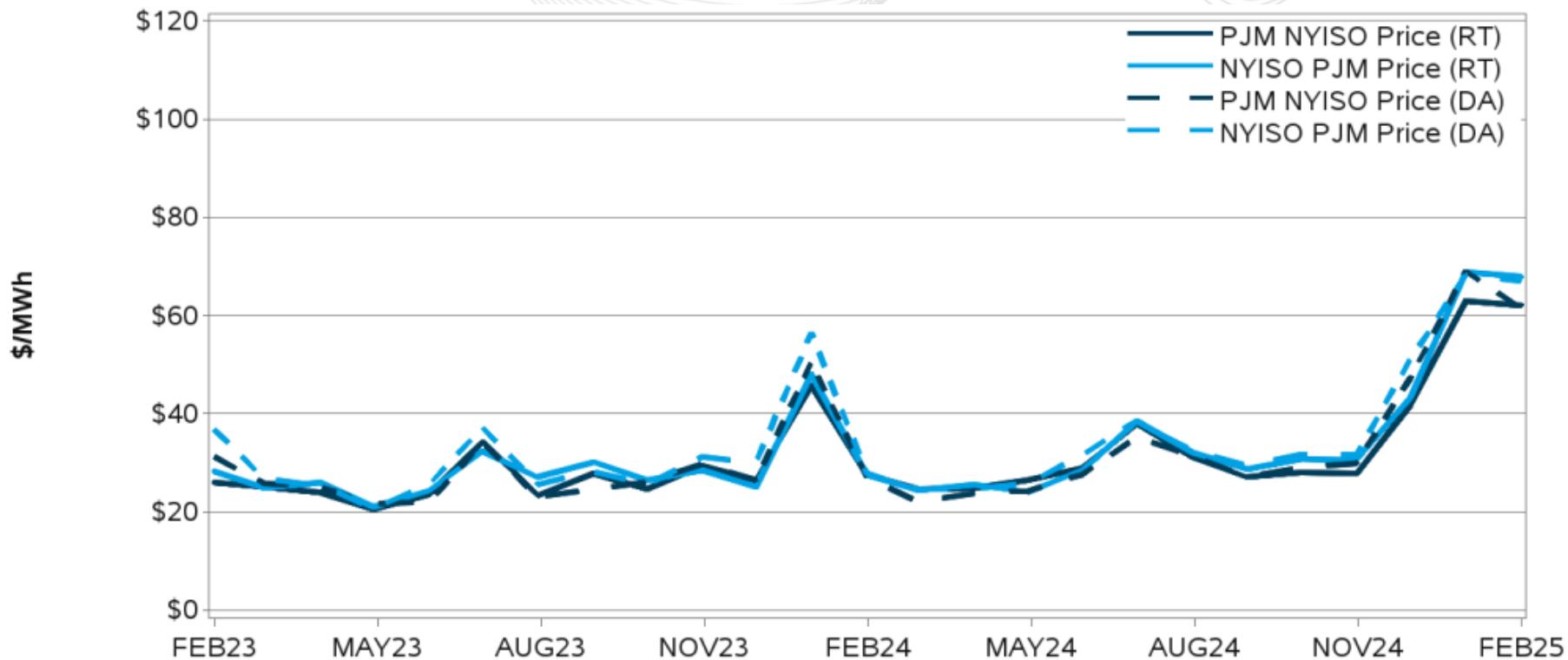
# Energy Market

## Interchange/Seams Summary

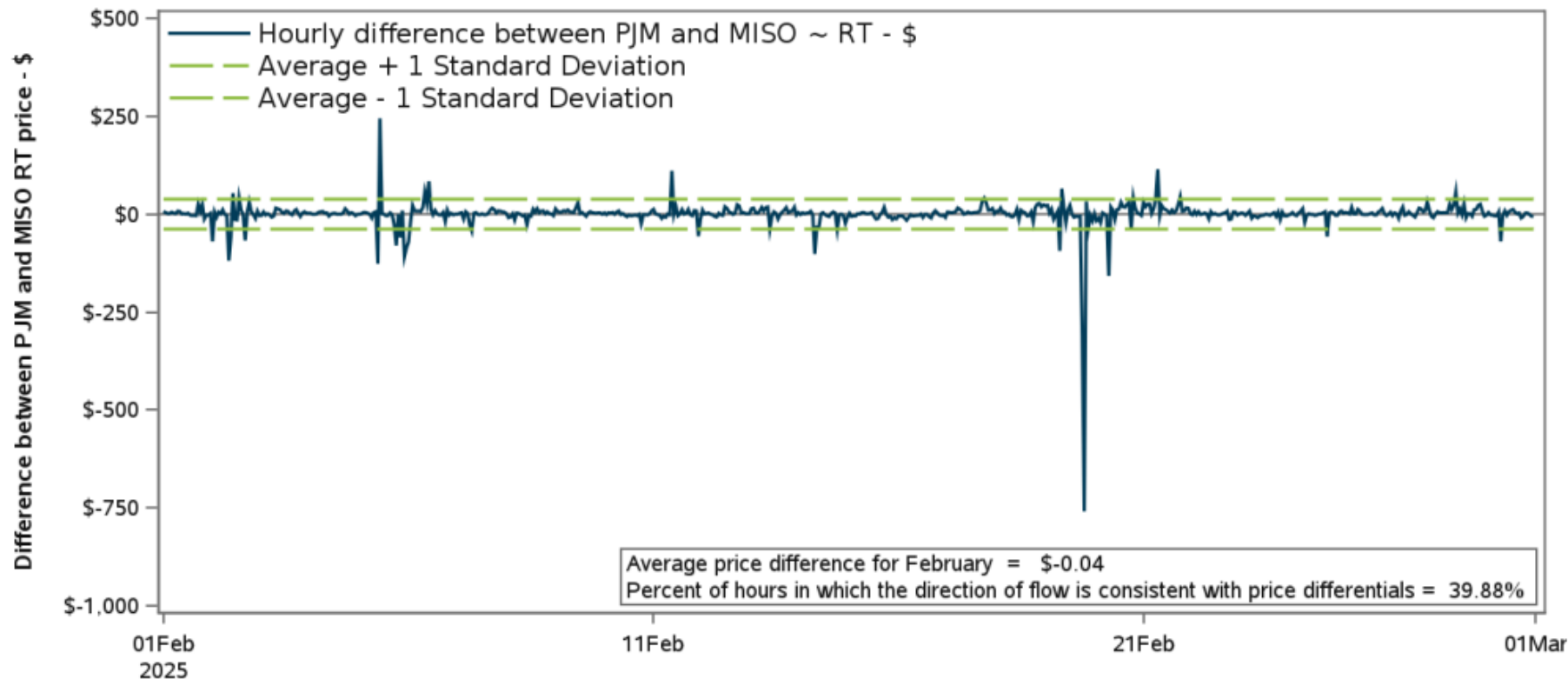
# Monthly Average MISO Interface Pricing



# Monthly Average NYISO Interface Pricing

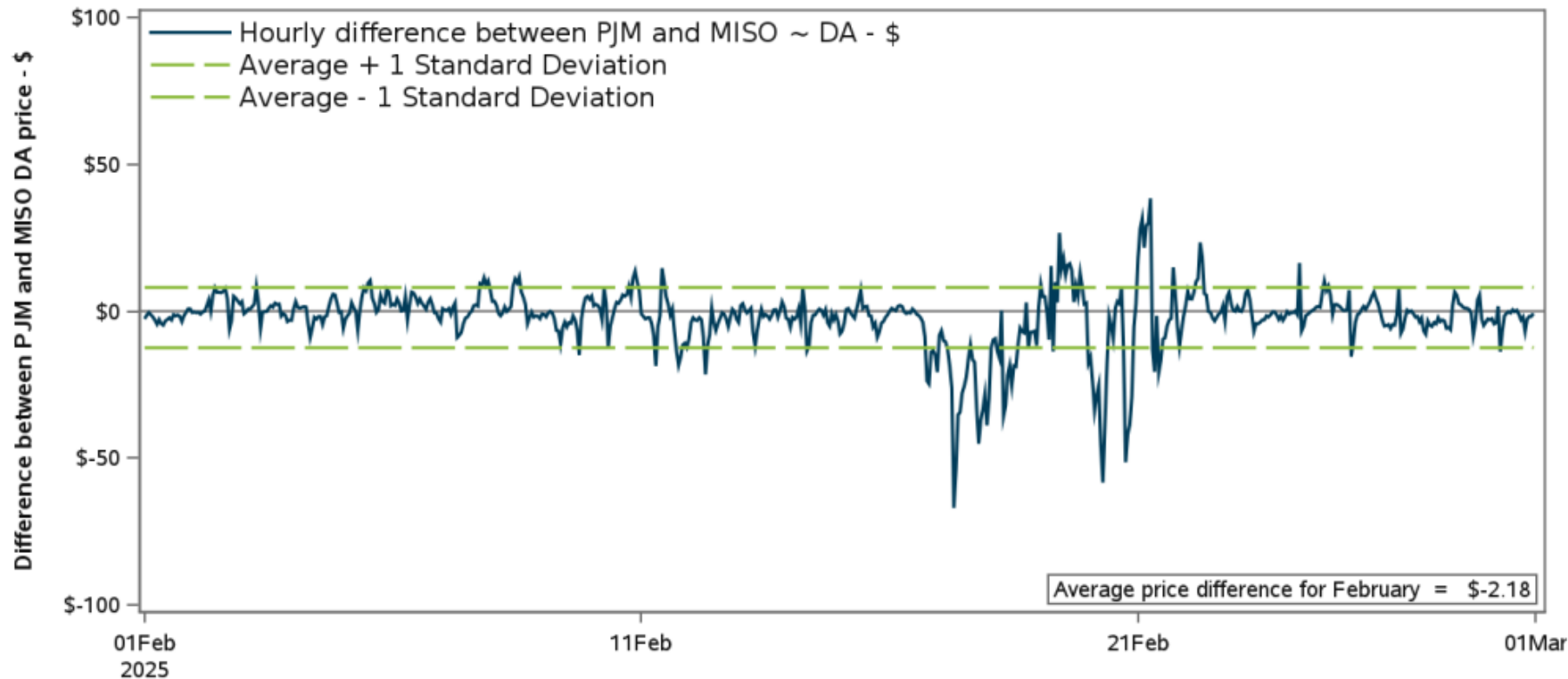


# Hourly Difference Between PJM and MISO Real-Time Prices



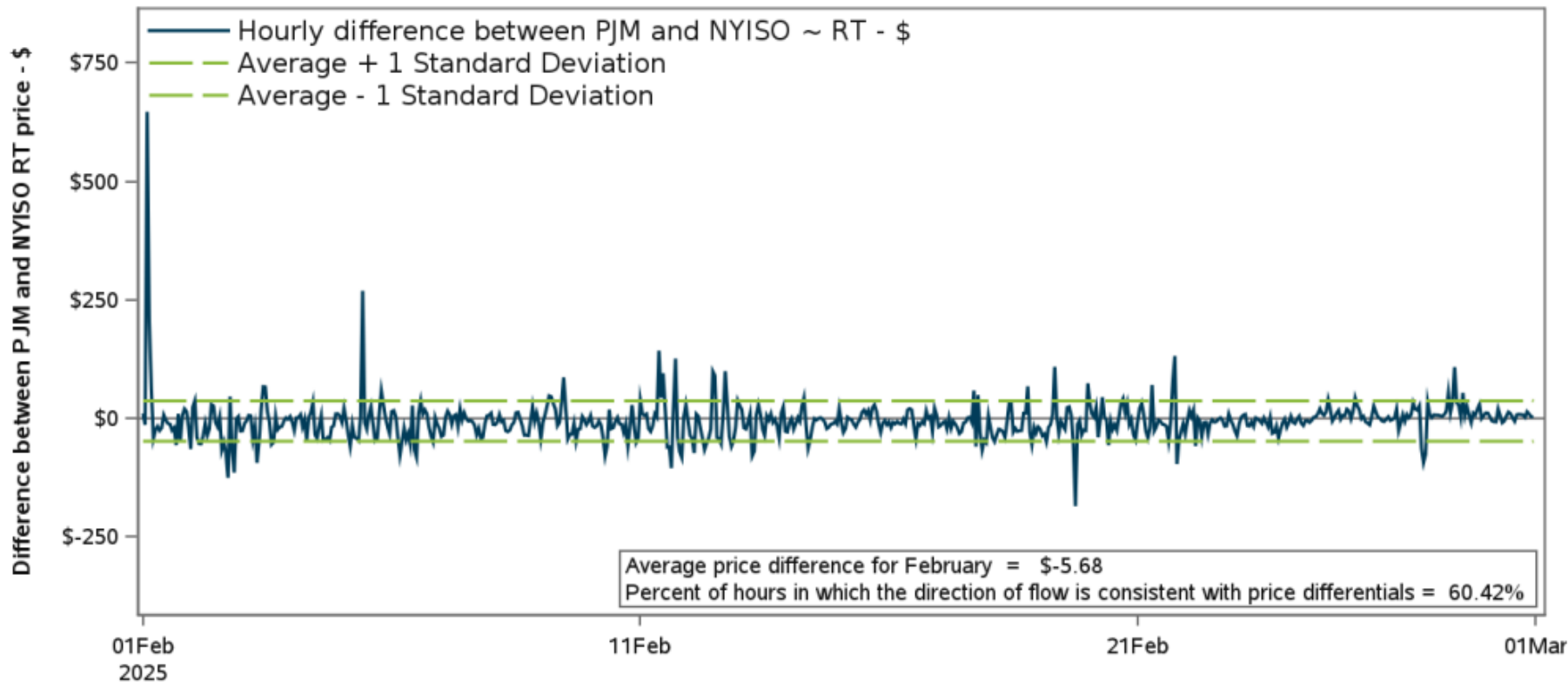
Positive values represent hours when the PJM price was higher. Negative values represent hours when the PJM price was lower.

# Hourly Difference Between PJM and MISO Day-Ahead Prices



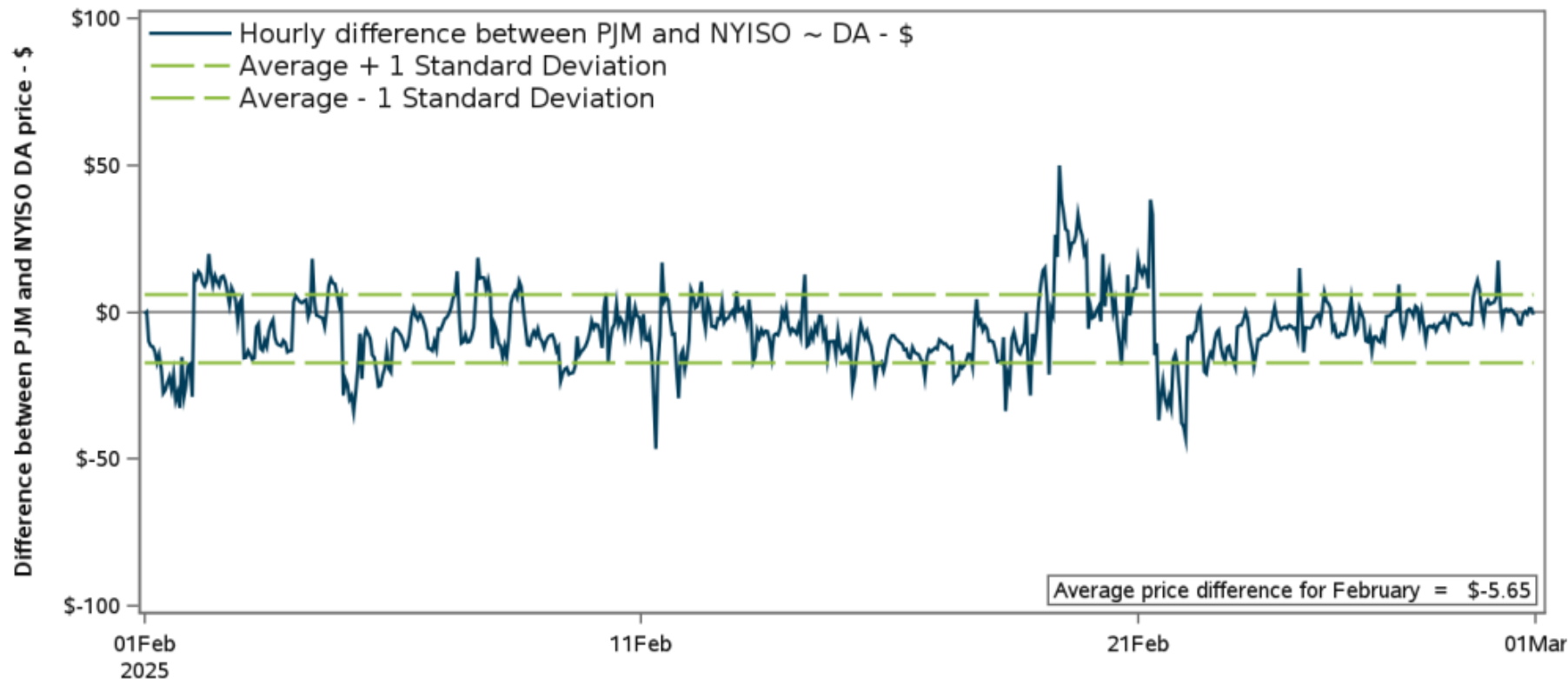
Positive values represent hours when the PJM price was higher. Negative values represent hours when the PJM price was lower.

# Hourly Difference Between PJM and NYISO Real-Time Prices



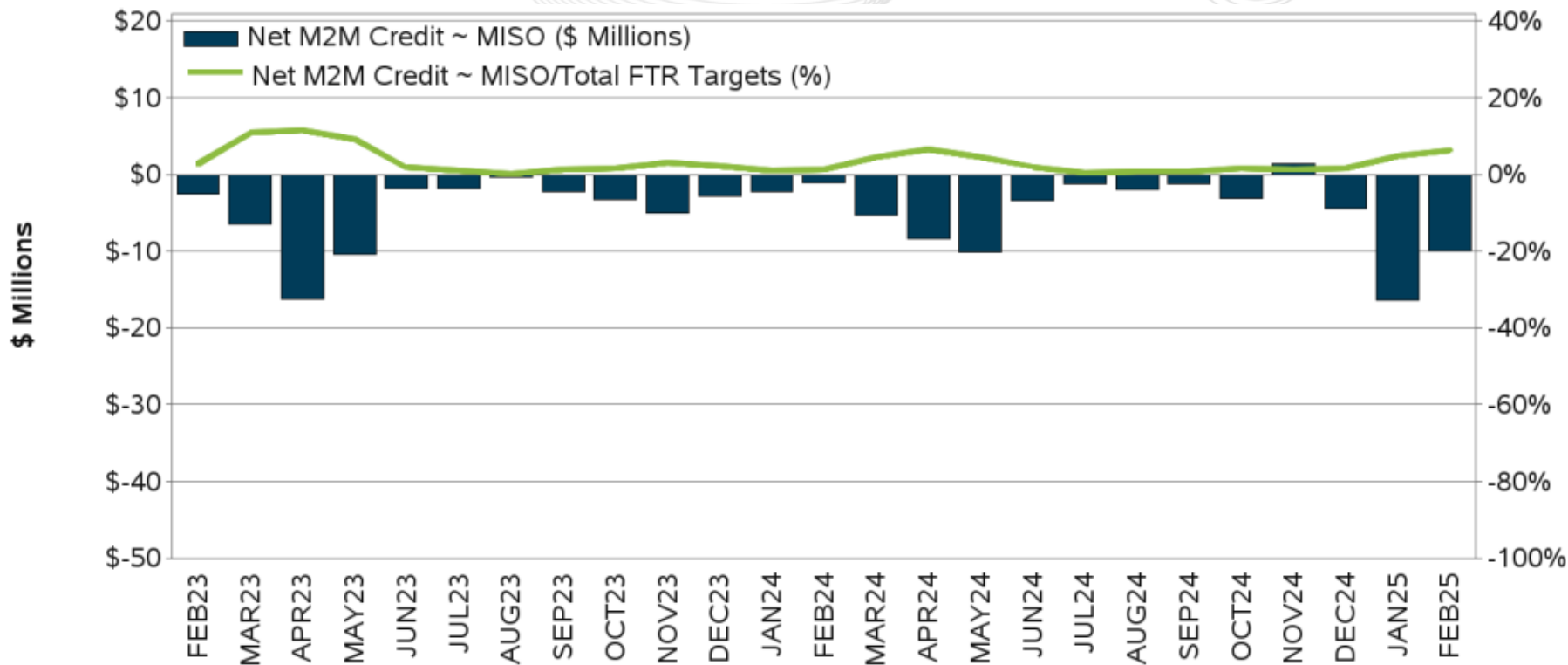
Positive values represent hours when the PJM price was higher. Negative values represent hours when the PJM price was lower.

# 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.

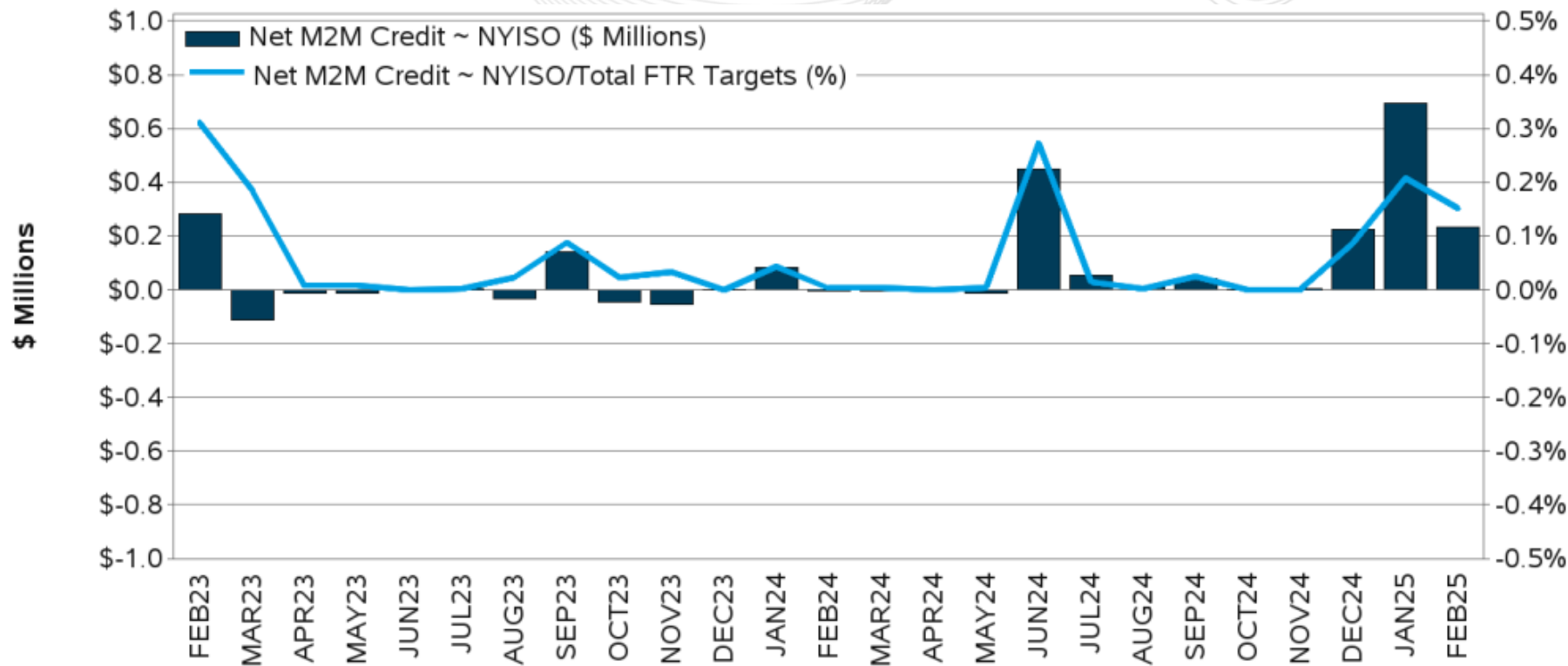
# PJM-MISO Market-to-Market Coordination Settlement



Negative M2M Credit represents PJM payment to MISO

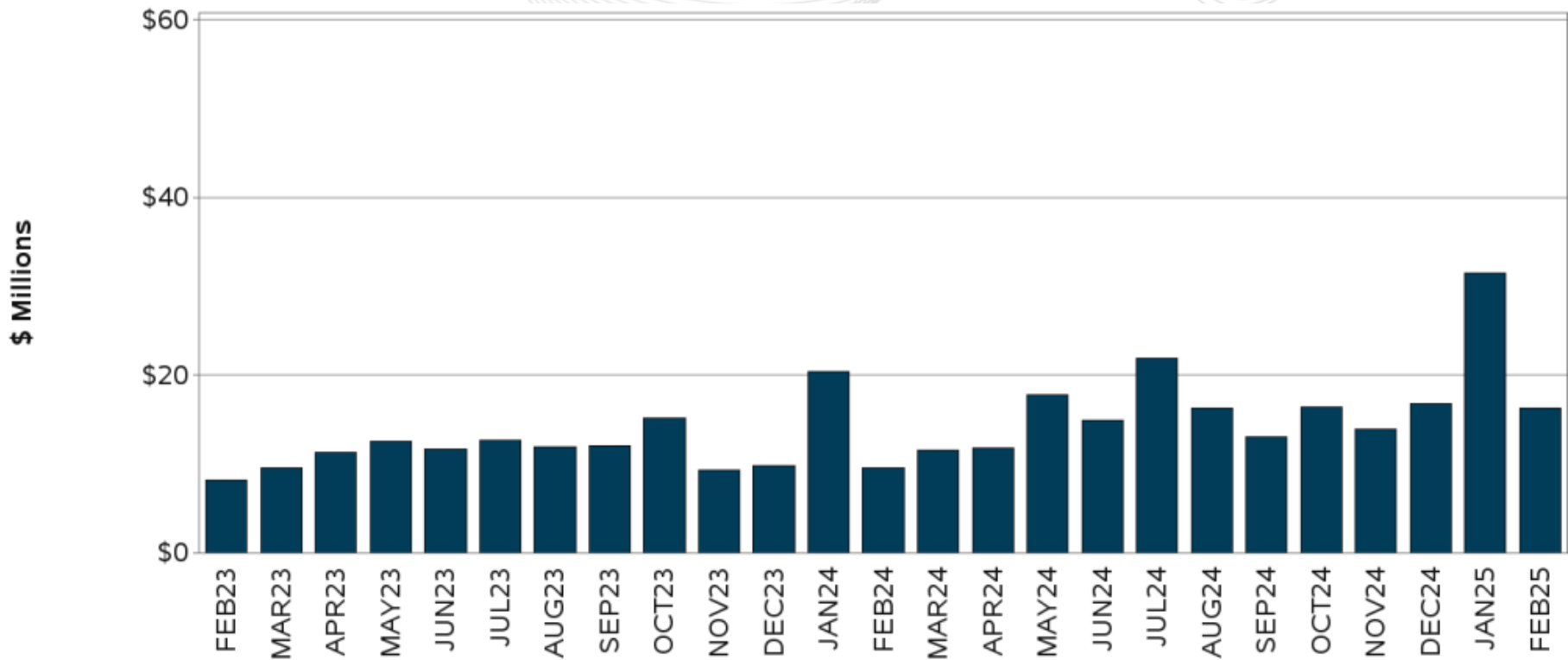


# PJM-NYISO Market-to-Market Coordination Settlement

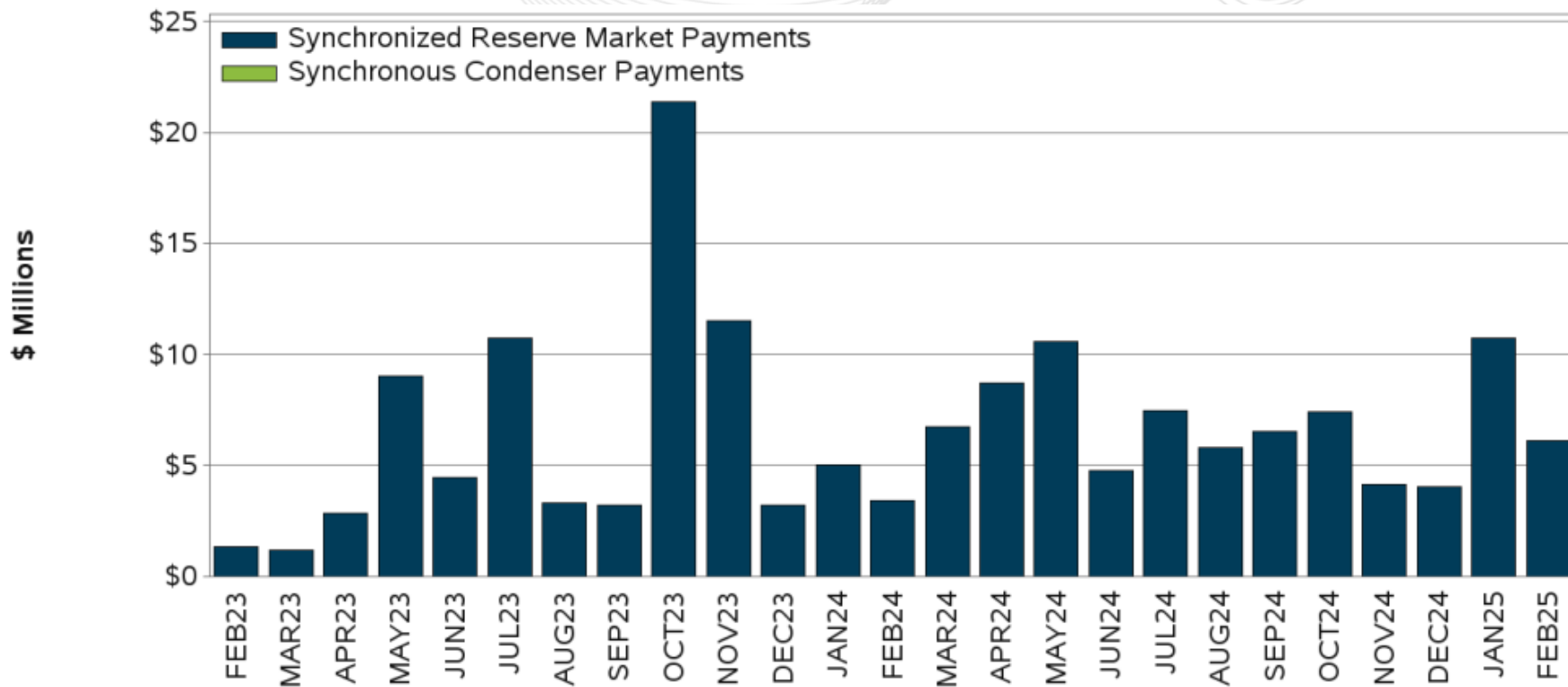


Negative M2M Credit represents PJM payment to NYISO

# Ancillary Service Market Summary

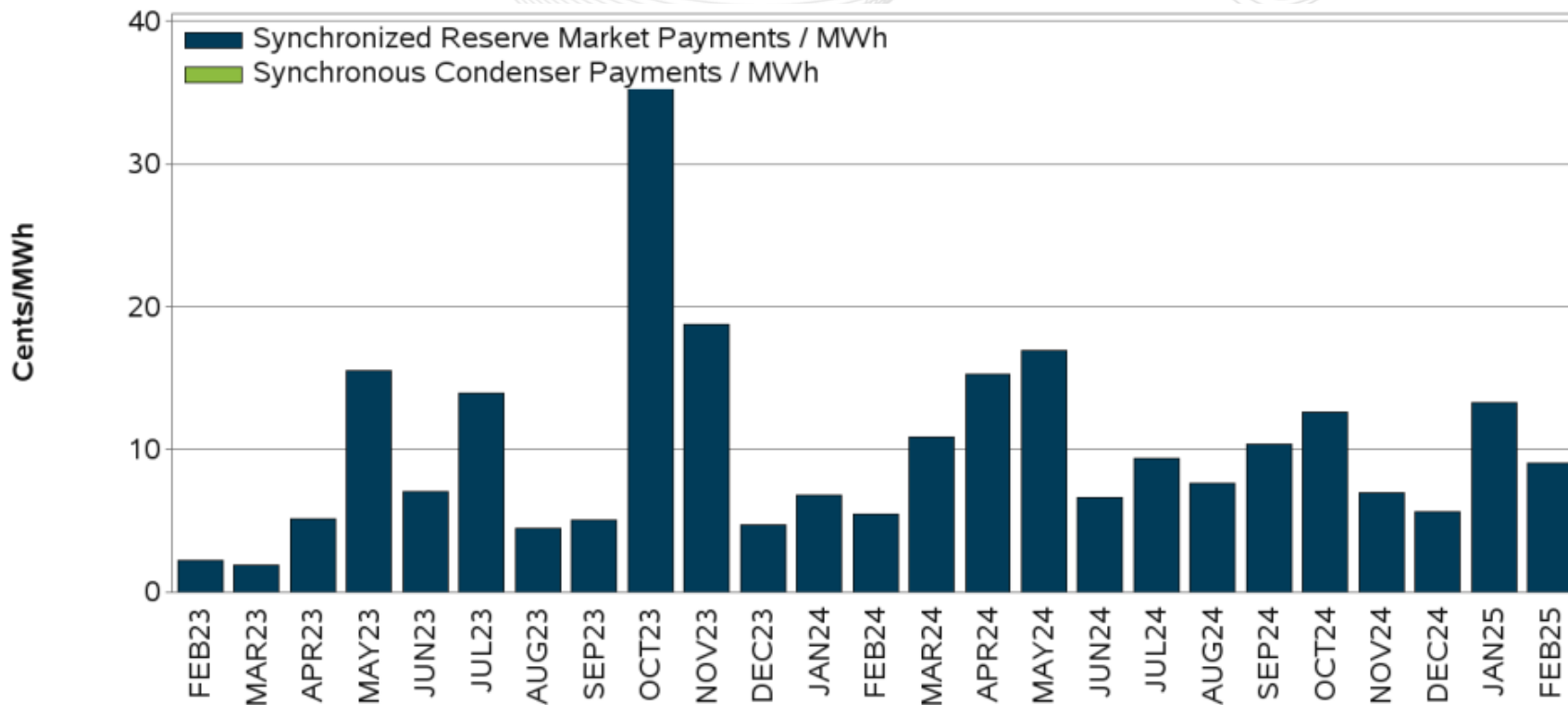


# Synchronized Reserve and Synchronous Condenser Costs

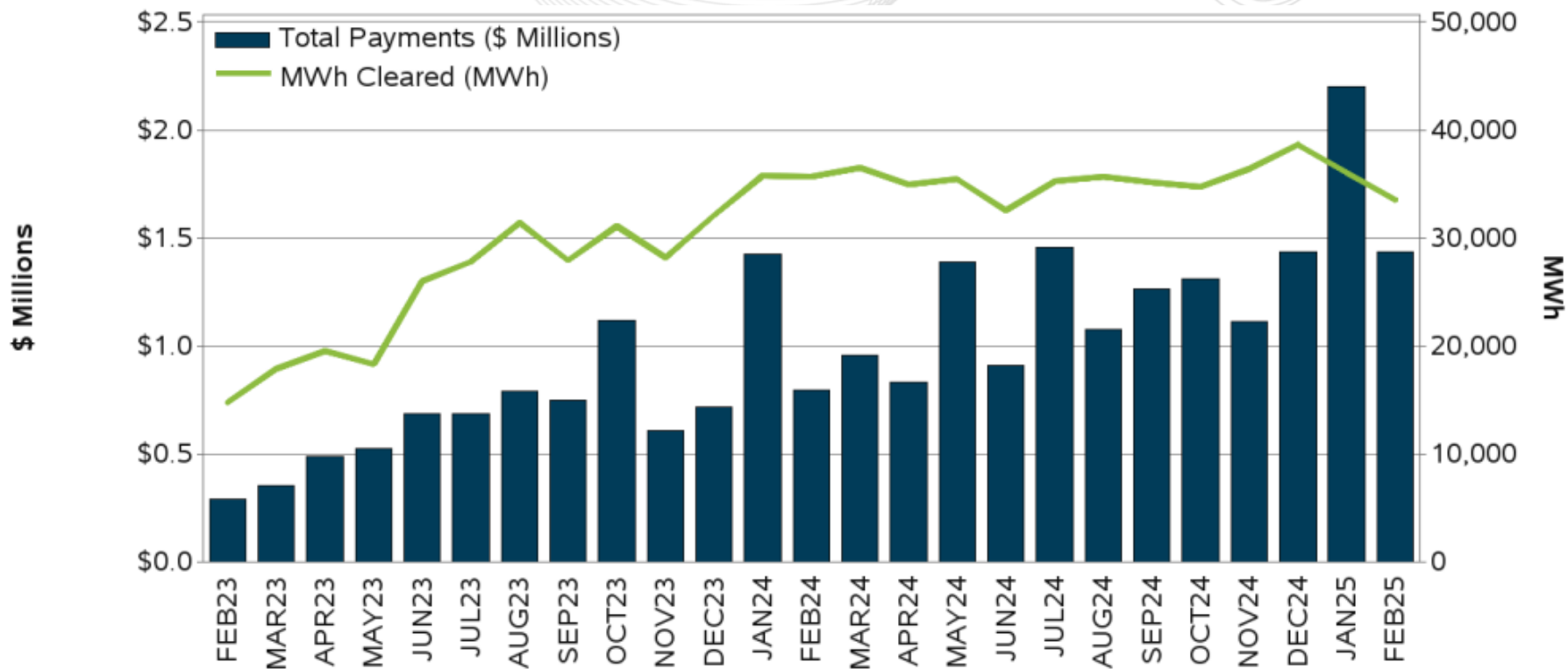




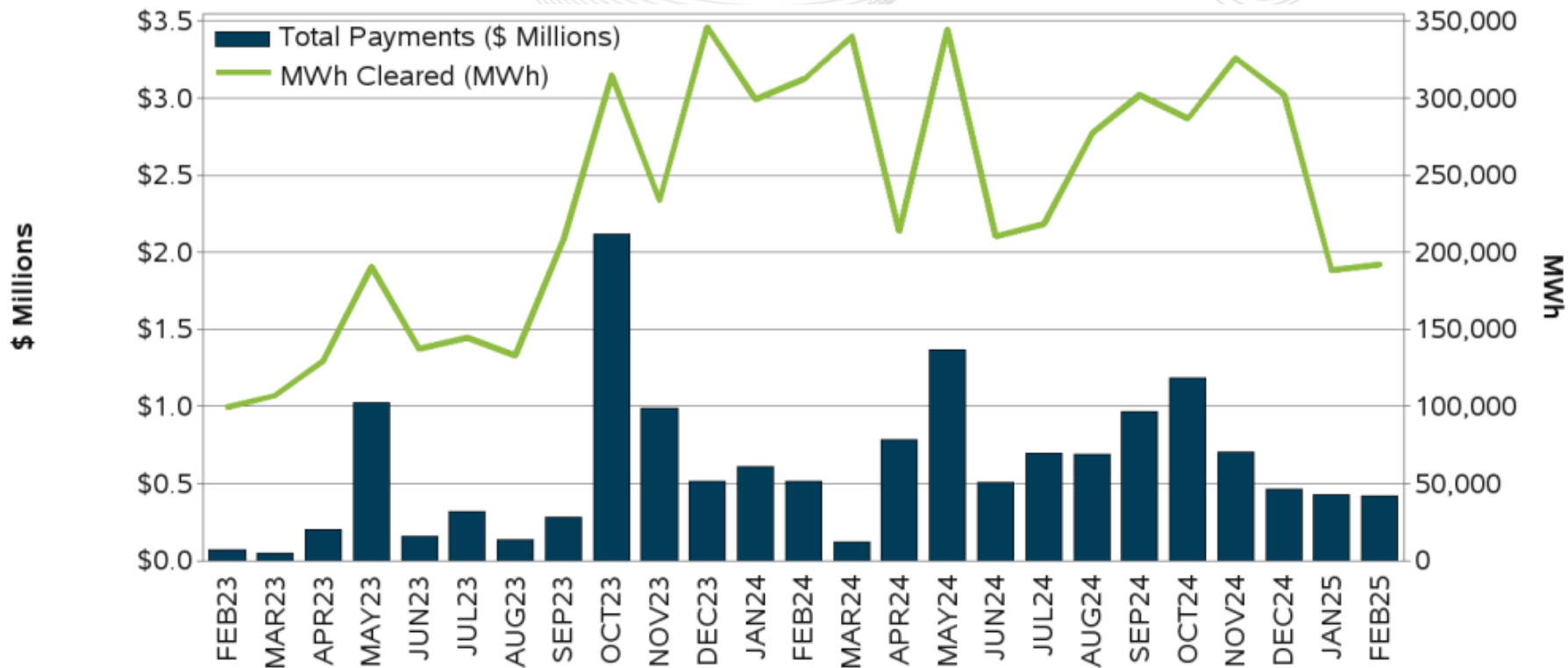
# Load-Adjusted Synchronized Reserve and Synchronous Condenser Costs

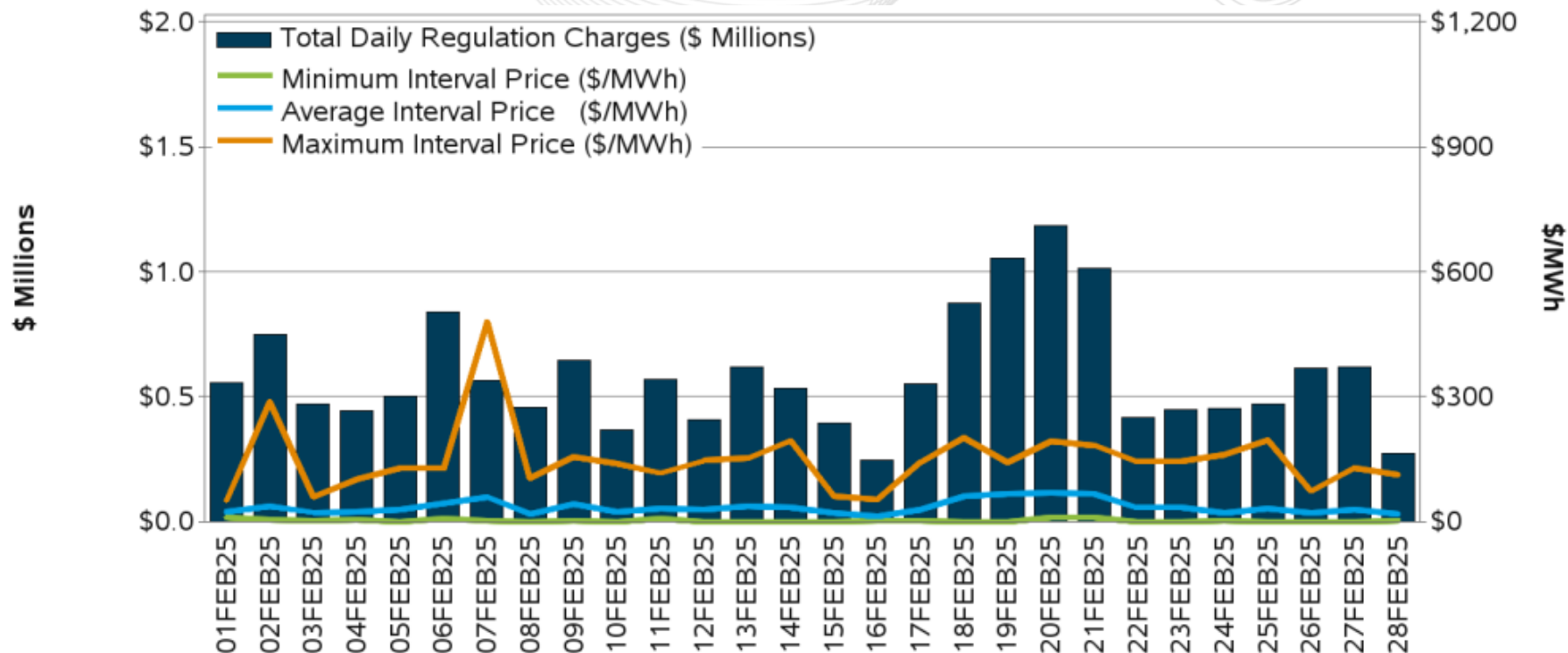


# DR Participation in PJM Regulation Markets



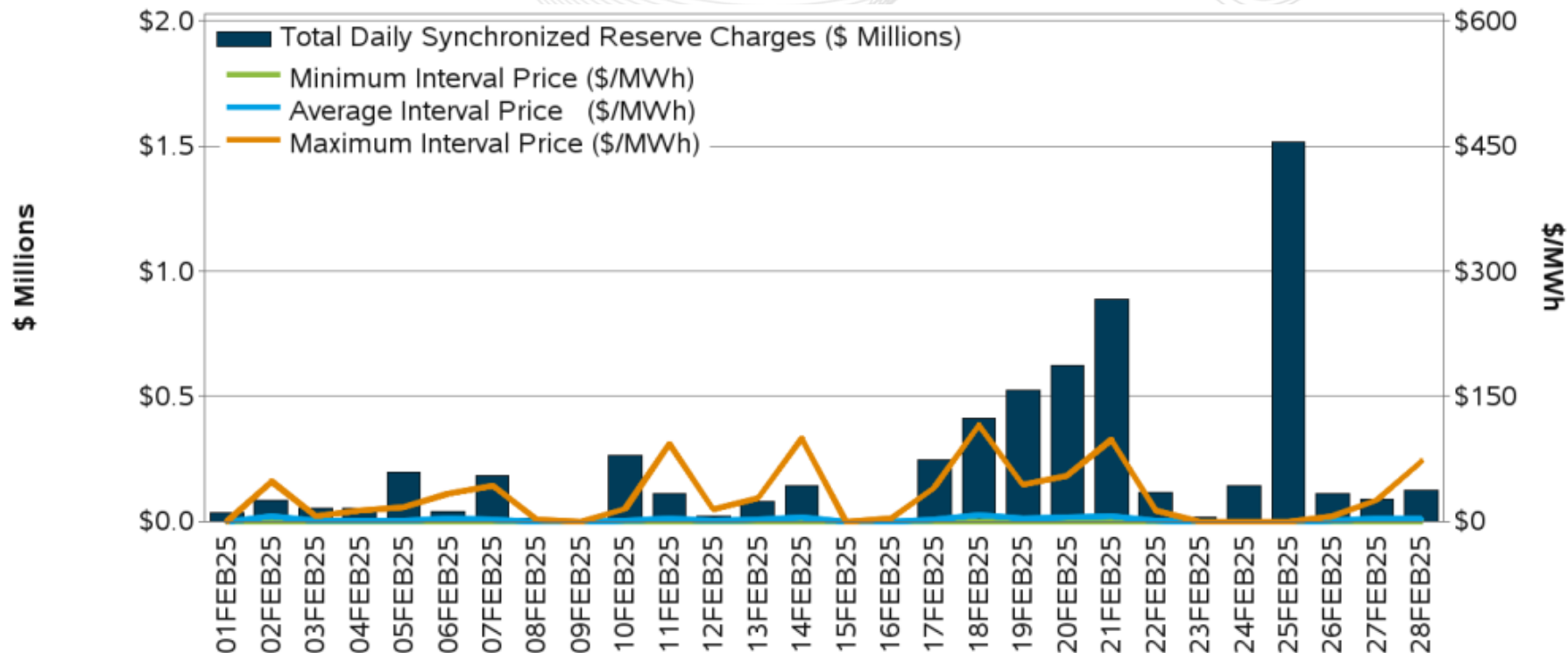
# DR Participation in PJM Synchronized Reserve Markets







# Synchronized Reserve Market Daily Prices and Charges



Jennifer Warner-Freeman  
**Jennifer.Freeman@pjm.com**

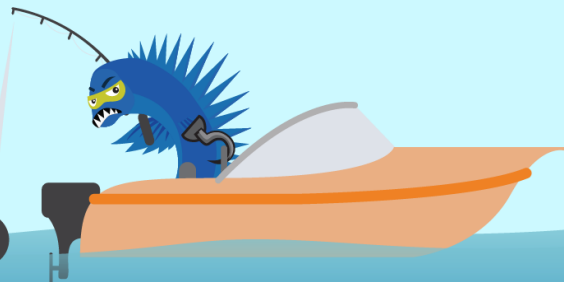


Member Hotline  
(610) 666 – 8980  
(866) 400 – 8980  
custsvc@pjm.com

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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)