

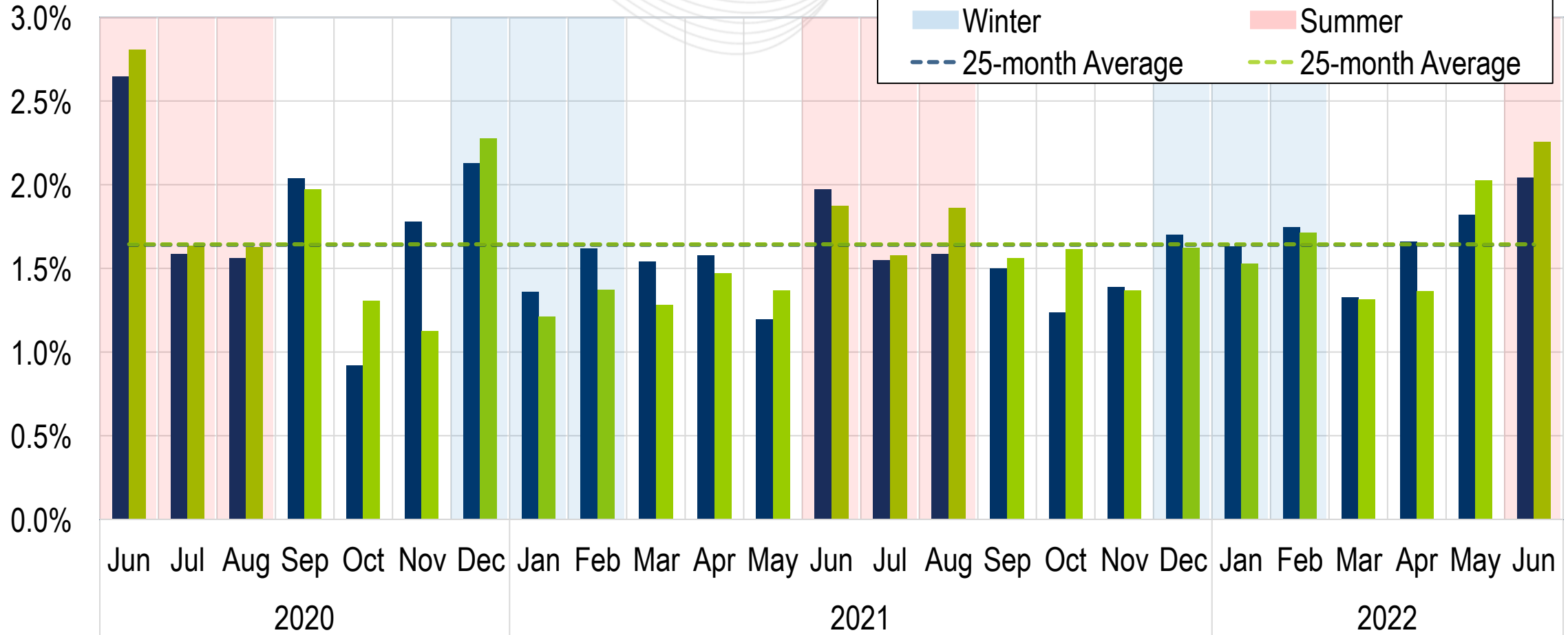


# System Operations Report

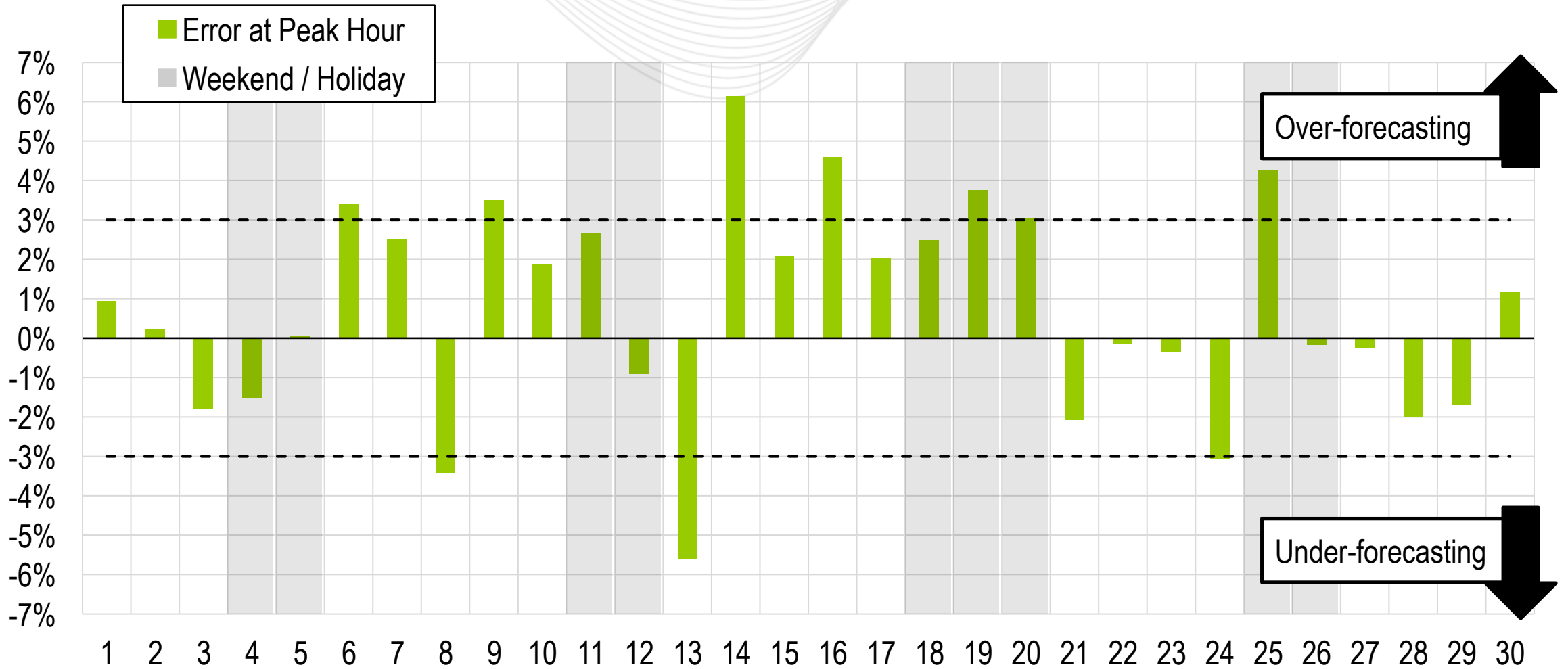
Stephanie Schwarz  
Manager, Markets Coordination  
Operating Committee  
July 14th, 2022

June 2022  
 Hourly Error: **2.04%** Peak Error: **2.26%**

- All Hours
- Winter
- 25-month Average
- Peak Hours Only
- Summer
- 25-month Average

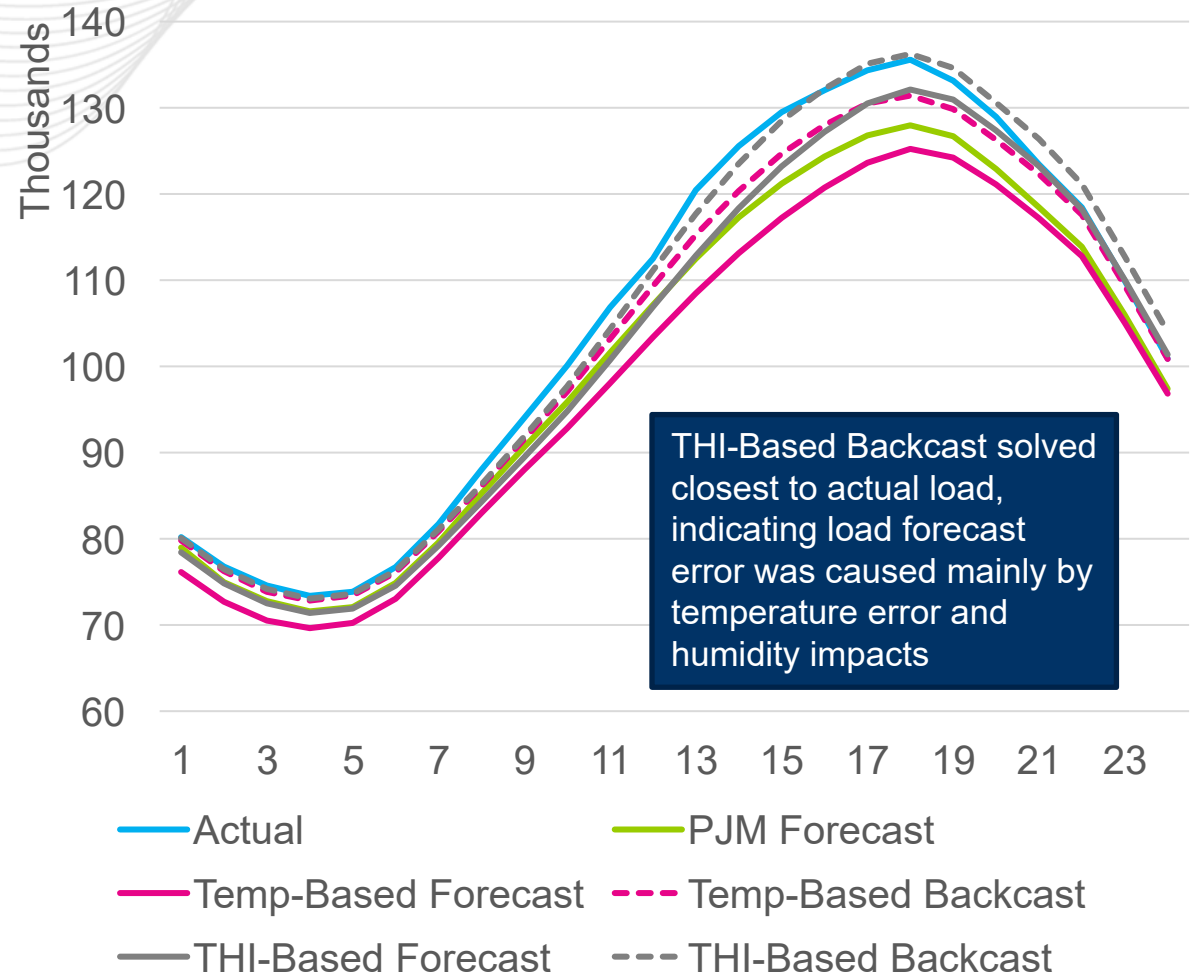


# Daily Peak Forecast Error (June)



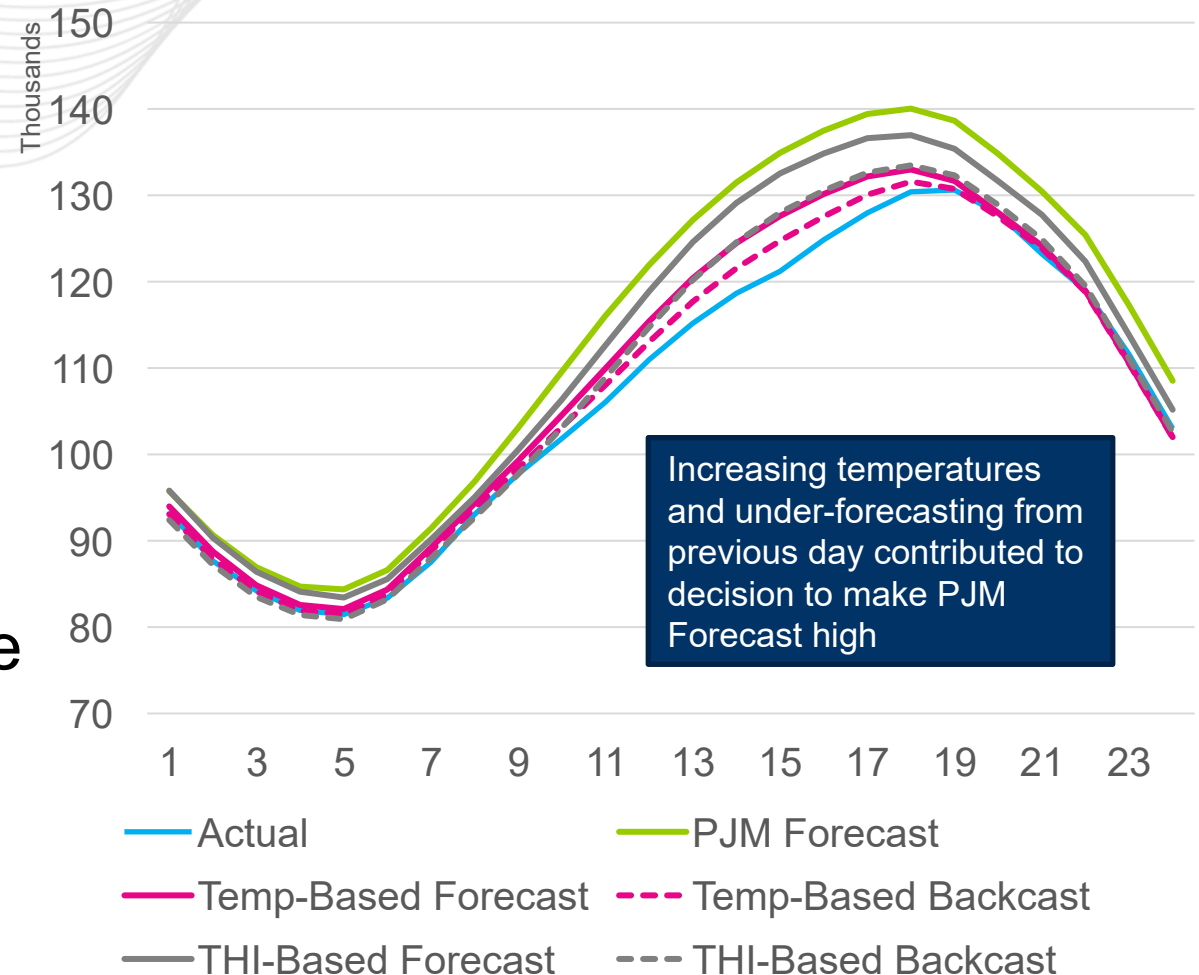
- Significant, widespread under-forecasting of temperatures throughout entire RTO
- First occurrence of extremely high heat indices this year
- Drastic increase in temperature and load from previous day (Sunday)
- Storms, which would have lowered load, did not materialize until after the load peak

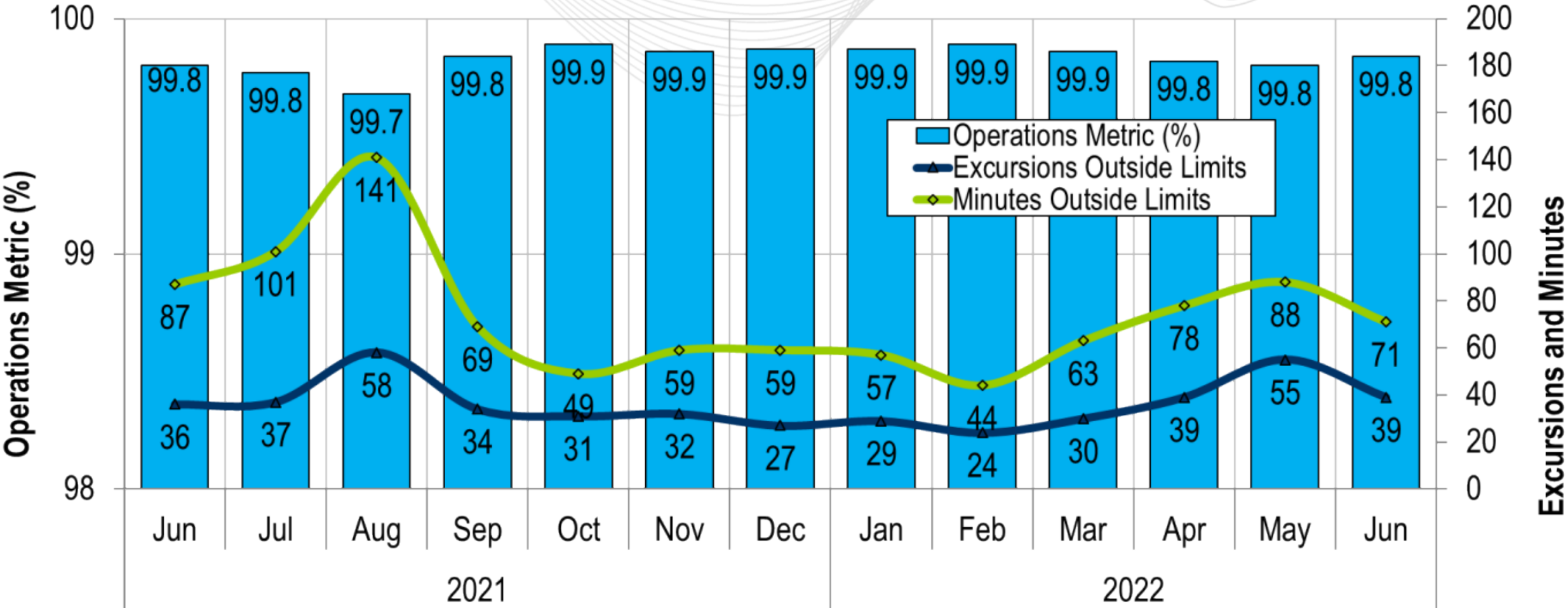
Day-Ahead Load Forecasts for 6/13



- High load forecast initially
  - Heat expected to intensify in the west
  - Storms expected, but location uncertain
  - Under-forecasting previous day
- Over-forecasting of temperatures, significant in some zones due to storm activity
- Ongoing customer outages from severe weather the night before

Day-Ahead Load Forecasts for 6/14





PJM's BAAL performance has exceeded the goal of 99% for each month in 2022.

- Two spinning events
- One reserve sharing event with the Northeast Power Coordinating Council (NPCC)
- The following Emergency Procedures occurred:
  - 59 Post-Contingency Local Load Relief Warnings (PCLLRW)
  - 11 Hot Weather Alerts
  - 1 Maximum Generation Emergency Alert
  - 3 Emergency Load Management Reduction Actions
  - 6 Load Shed Directives
  - 1 NERC EEA Level 1
  - 3 NERC EEA Level 2

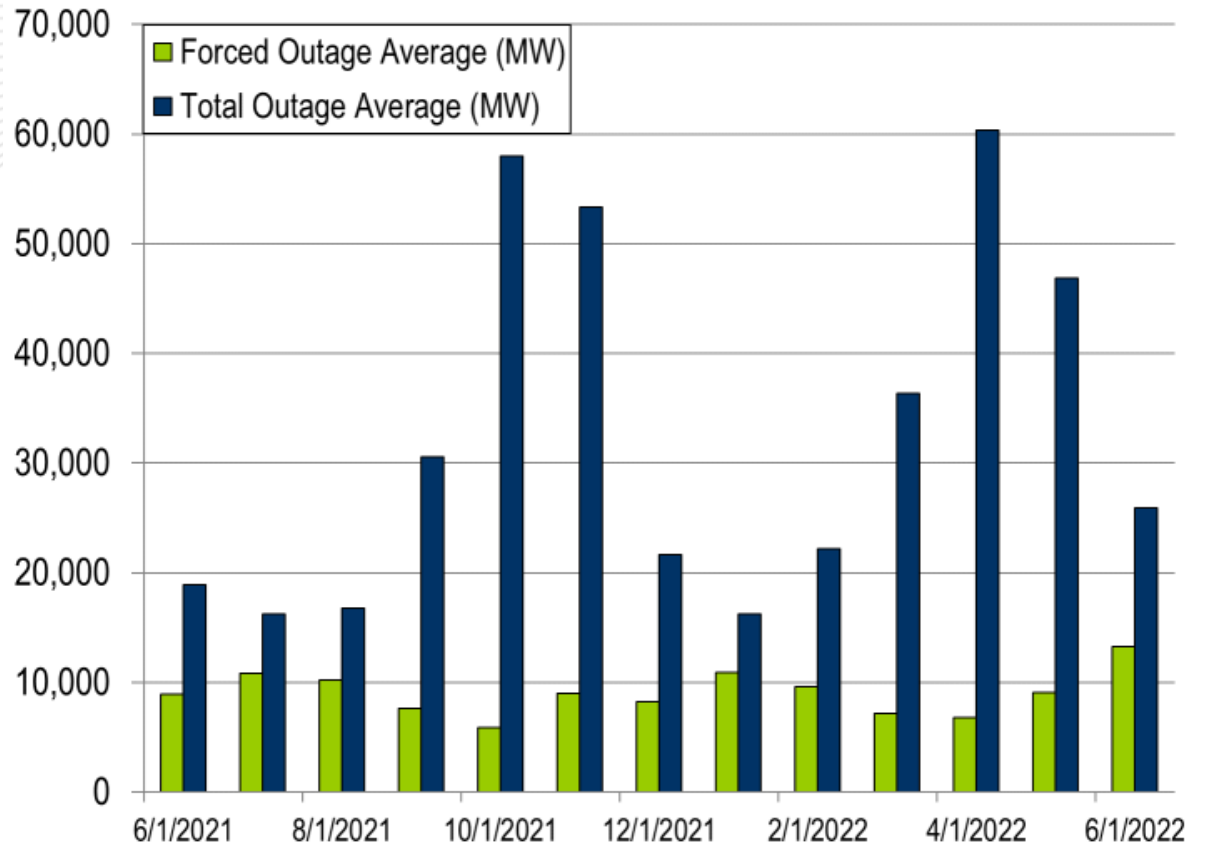
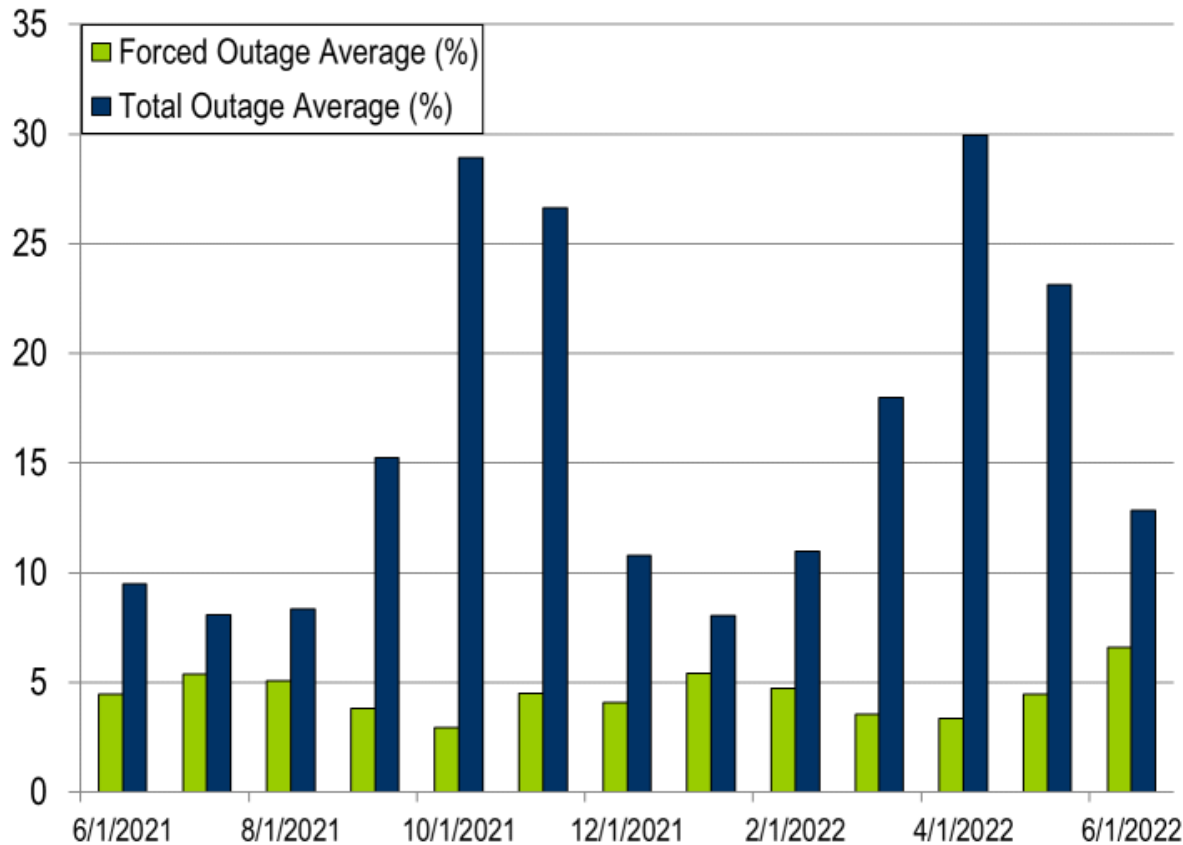


- 35 Shortage Cases Approved
- The approved Shortage Cases occurred on:
  - 06/27/22:
    - 2 Shortage Cases for 17:10 and 17:15 intervals
    - Unit trip
  - 06/29/22:
    - 1 Shortage Case for 16:35 interval
    - Load coming in higher than forecasted
    - Unit ramping down



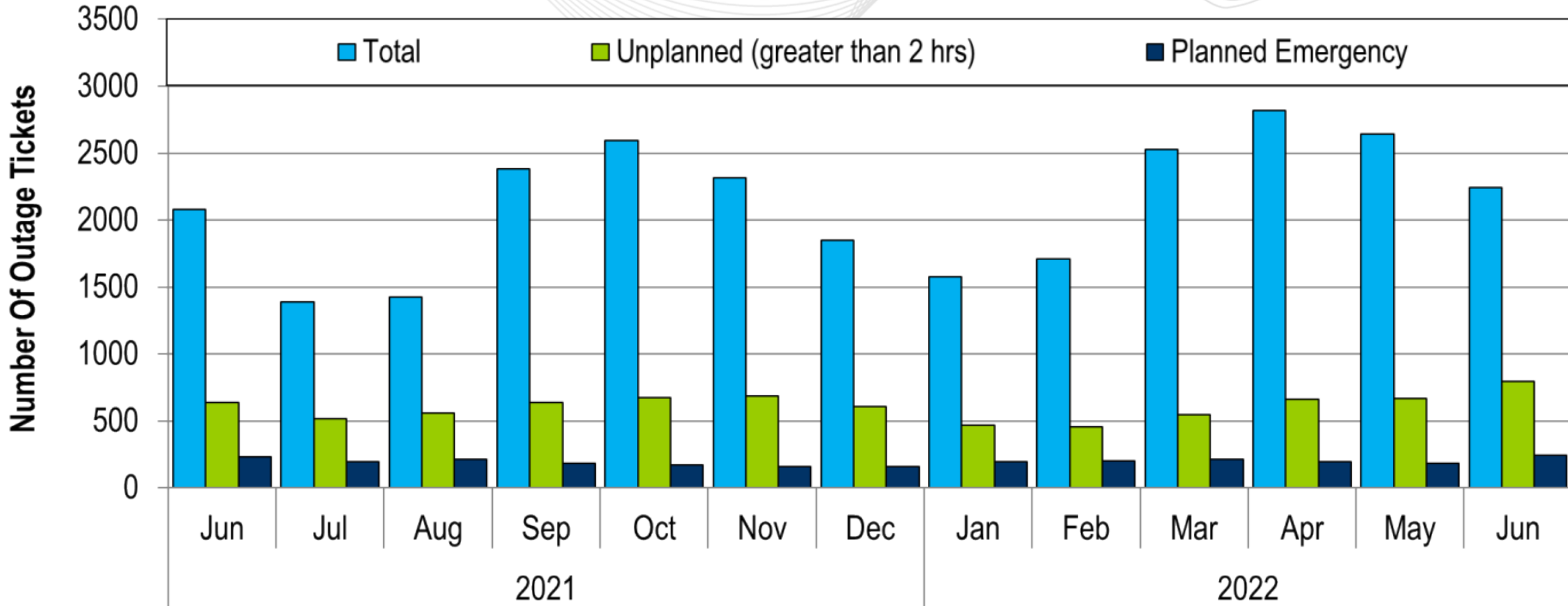
- 35 Shortage Intervals approved by Dispatch
  - Between 14:55 and 18:05
- All intervals reviewed and validated during LMP Verification on June 14

Number of Intervals	Reserve Penalty Factors	Factors
22	MAD & RTO – Primary	<ul style="list-style-type: none"> <li>• Under-forecasting during peak hours</li> <li>• Unit trip during peak hours</li> </ul>
8	MAD & RTO – Primary and Sync	
3	MAD – Primary / RTO Primary & Sync	
2	RTO Primary	



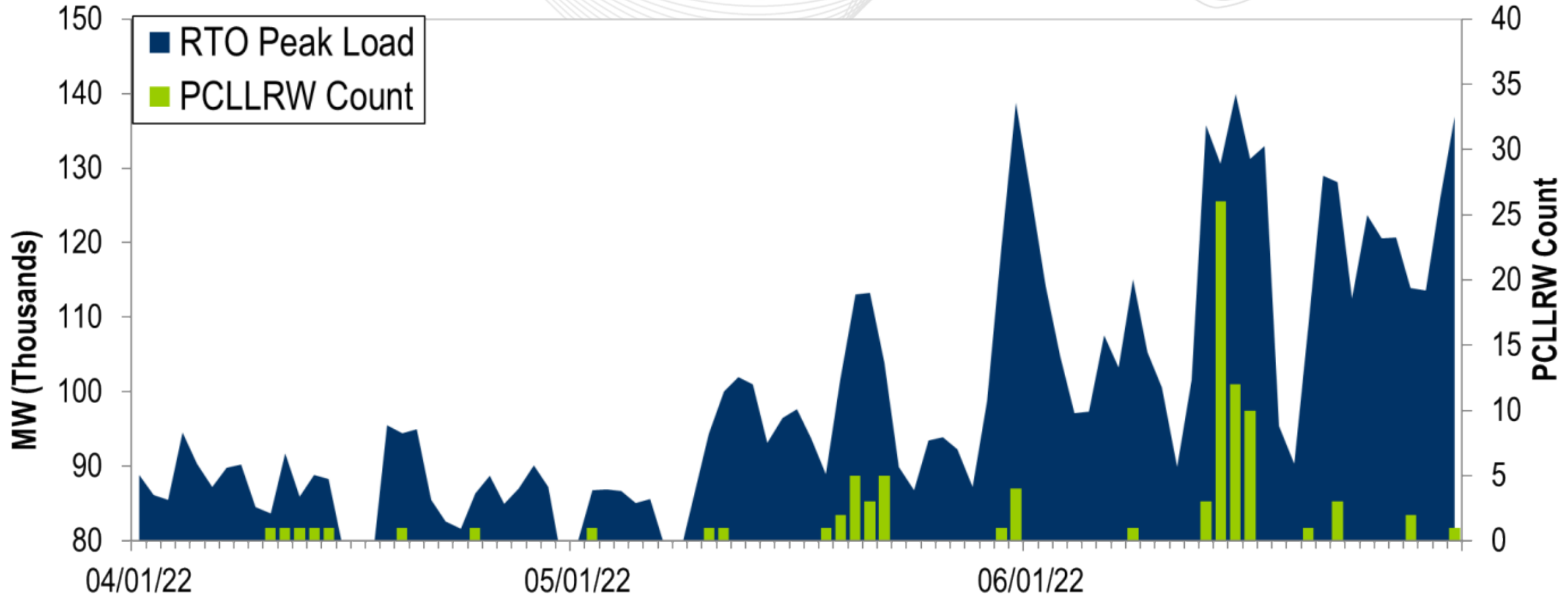
The 13-month average forced outage rate is 4.50% or 9,043 MW.  
 The 13-month average total outage rate is 16.20% or 32,581 MW.

# 2021-2022 Planned Emergency, Unplanned, and Total Outages by Ticket



Note: "Unplanned Outages" include tripped facilities. One tripping event may involve multiple facilities.

# PCLLRW Count Vs. Peak Load – Daily Values For 3 Months



Event	Date	Start Time	End Time	Duration	Region	Tier 1 Estimate (MW)	Tier 1 Response (MW)
1	06/22/22	15:06:33	15:13:45	00:07:12	RTO	658.8	305.5
2	06/27/22	17:01:40	17:10:43	00:09:03	RTO	516.7	595.5

Event	Date	Start Time	End Time	Duration	Region	Tier 2 Assigned (MW)	Tier 2 Response (MW)	Tier 2 Penalty (MW)
1	06/22/22	15:06:33	15:13:45	00:07:12	RTO	1121.2	1121.2	0.0
2	06/27/22	17:01:40	17:10:43	00:09:03	RTO	1267.7	1267.7	0.0

\*Tier 2 Response is equal to Tier 2 Assigned for events with duration less than ten minutes

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System Operations Report



### Member Hotline

(610) 666 – 8980

(866) 400 – 8980

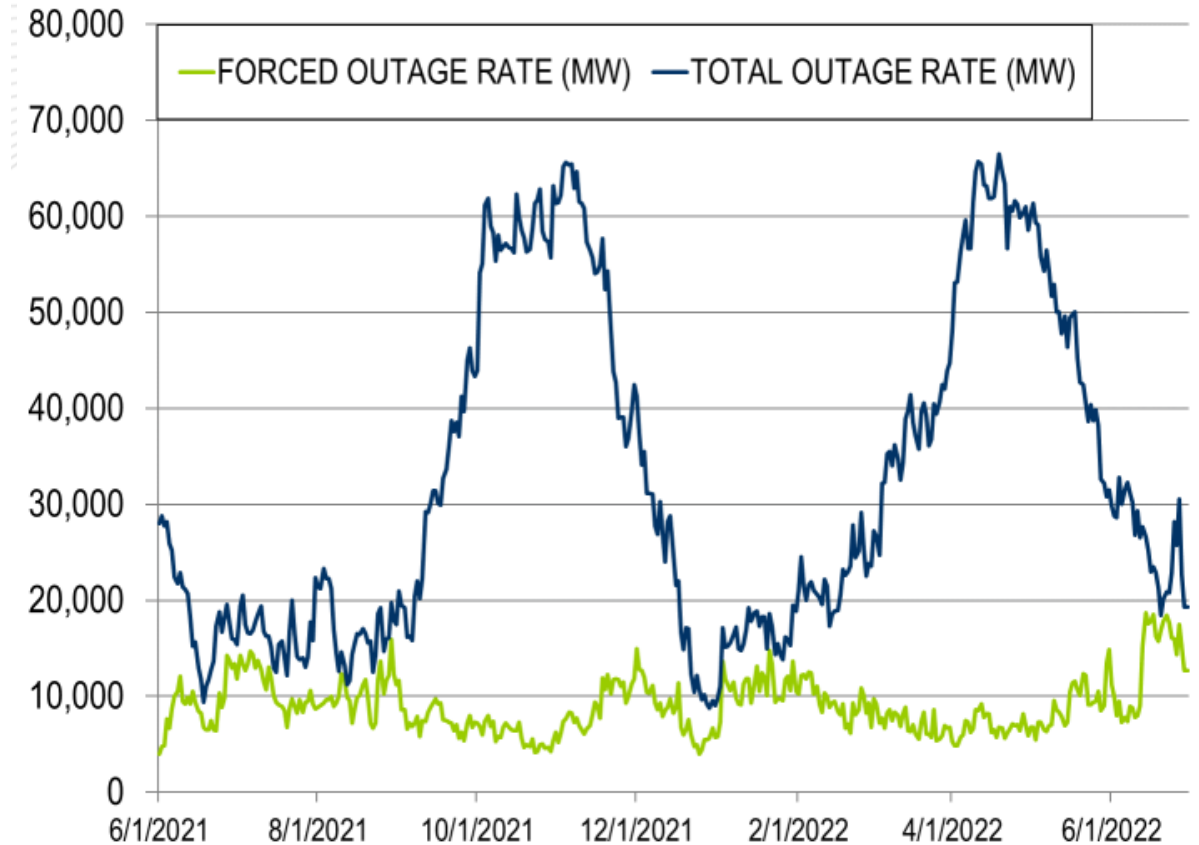
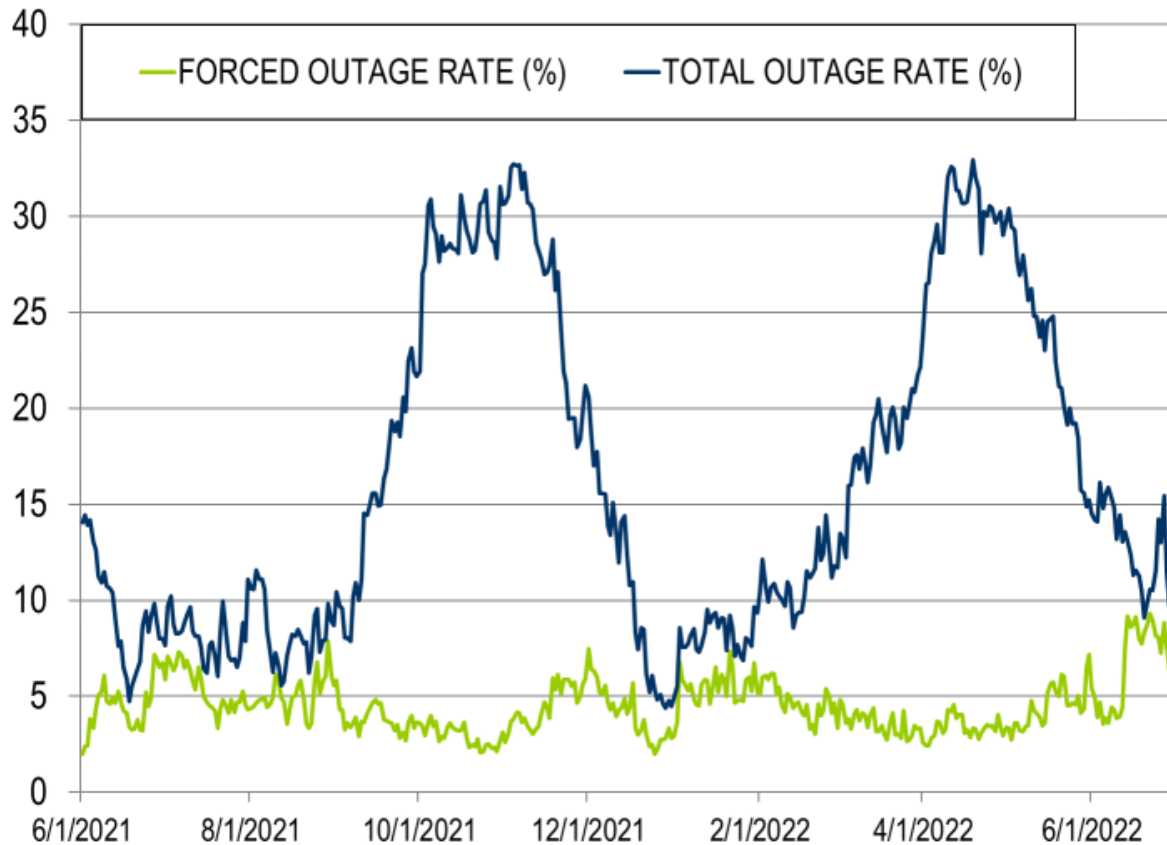
[custsvc@pjm.com](mailto:custsvc@pjm.com)

# Appendix



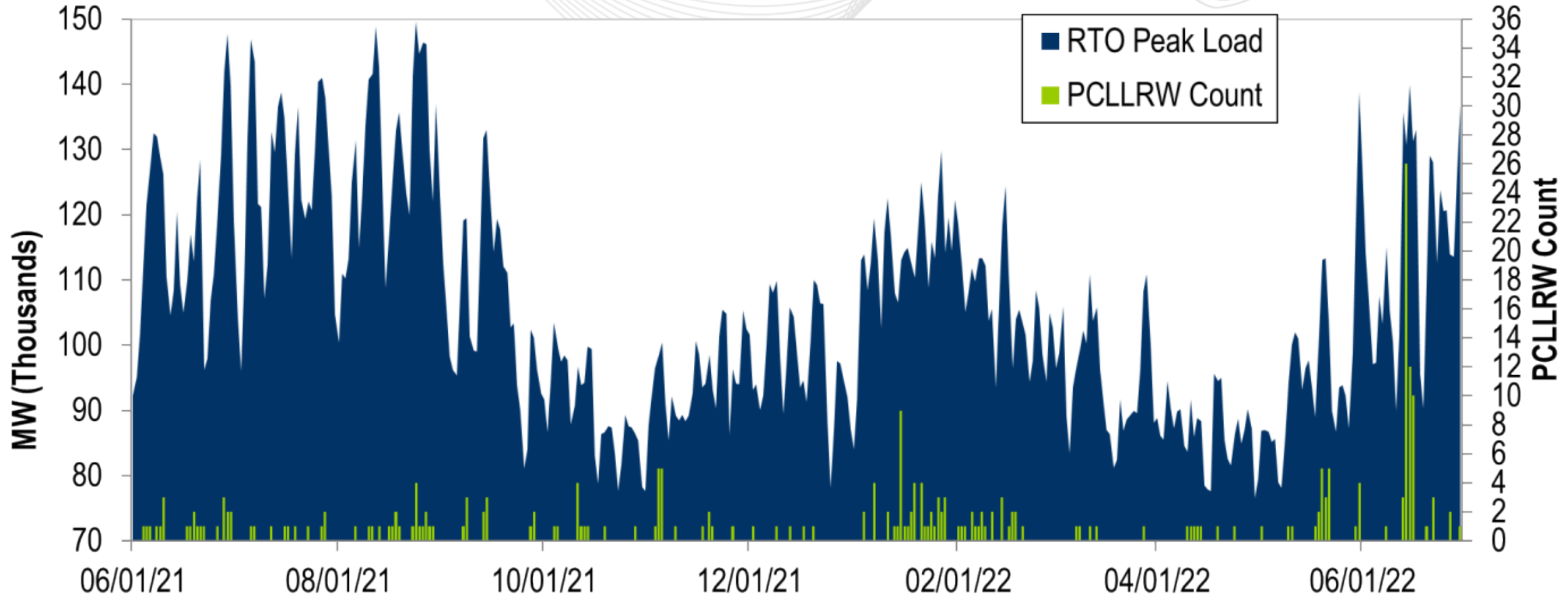
## Goal Measurement: Balancing Authority ACE Limit (BAAL)

- The purpose of the new BAAL standard is to maintain interconnection frequency within a predefined frequency profile under all conditions (normal and abnormal), to prevent frequency-related instability, unplanned tripping of load or generation, or uncontrolled separation or cascading outages that adversely impact the reliability of the interconnection. NERC requires each balancing authority demonstrate real-time monitoring of ACE and interconnection frequency against associated limits and shall balance its resources and demands in real time so that its Reporting ACE does not exceed the BAAL ( $BAAL_{LOW}$  or  $BAAL_{HIGH}$ ) for a continuous time period greater than 30 minutes for each event.
- PJM directly measures the total number of BAAL excursions in minutes compared to the total number of minutes within a month. PJM has set a target value for this performance goal at 99% on a daily and monthly basis. In addition, current NERC rules limit the recovery period to no more than 30 minutes for a single event.



The 13-month average forced outage rate is 4.50% or 9,043 MW.  
 The 13-month average total outage rate is 16.20% or 32,581 MW.

# PCLLRW Count Vs. Peak Load – Daily Values For 13 Months



**PROTECT THE  
POWER GRID  
THINK BEFORE  
YOU CLICK!**



Be alert to  
malicious  
phishing emails.

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

