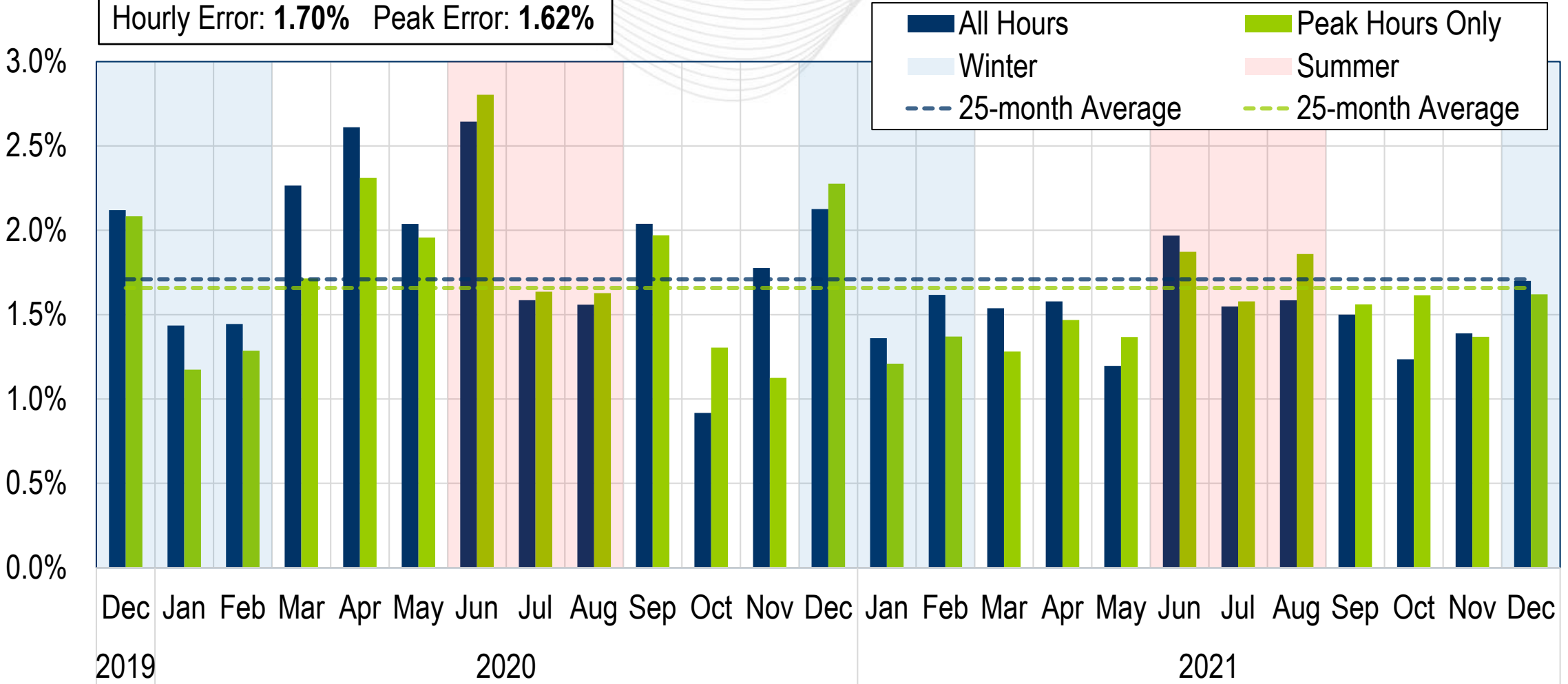




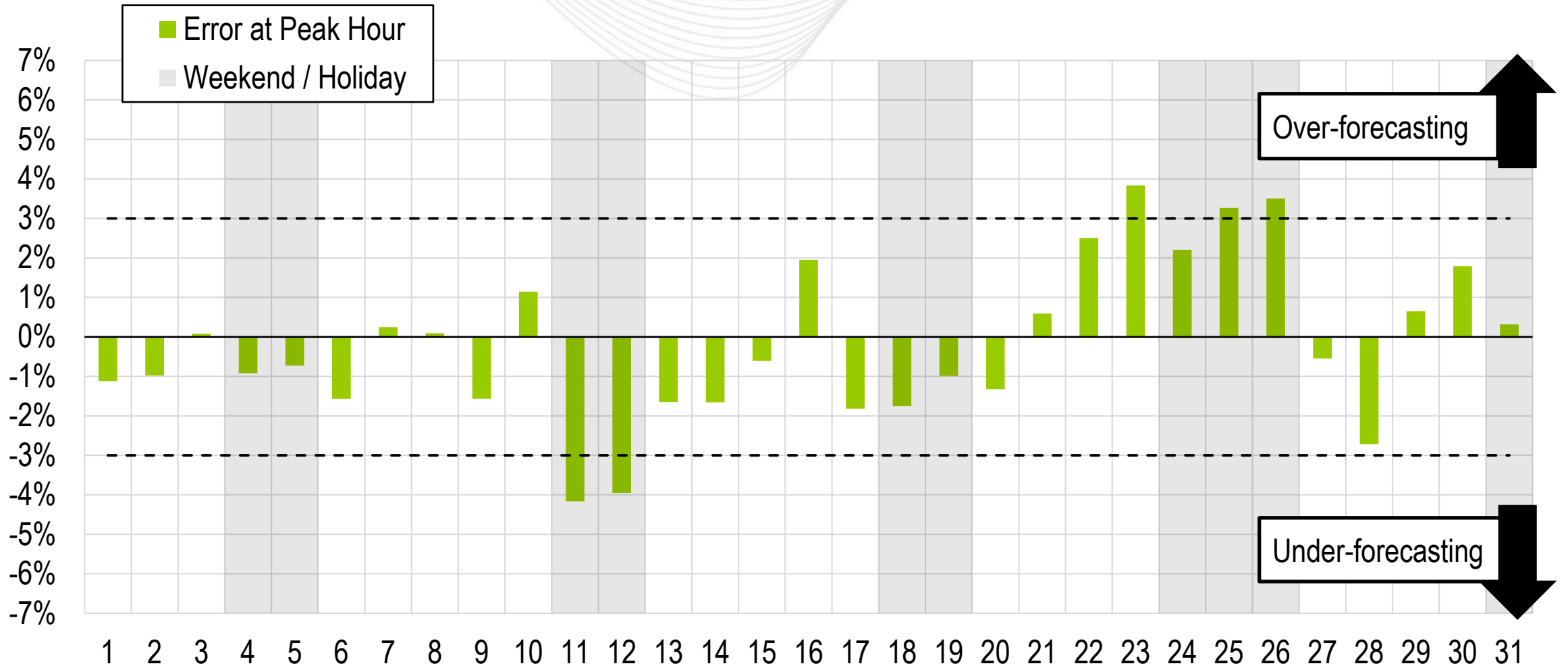
# System Operations Report

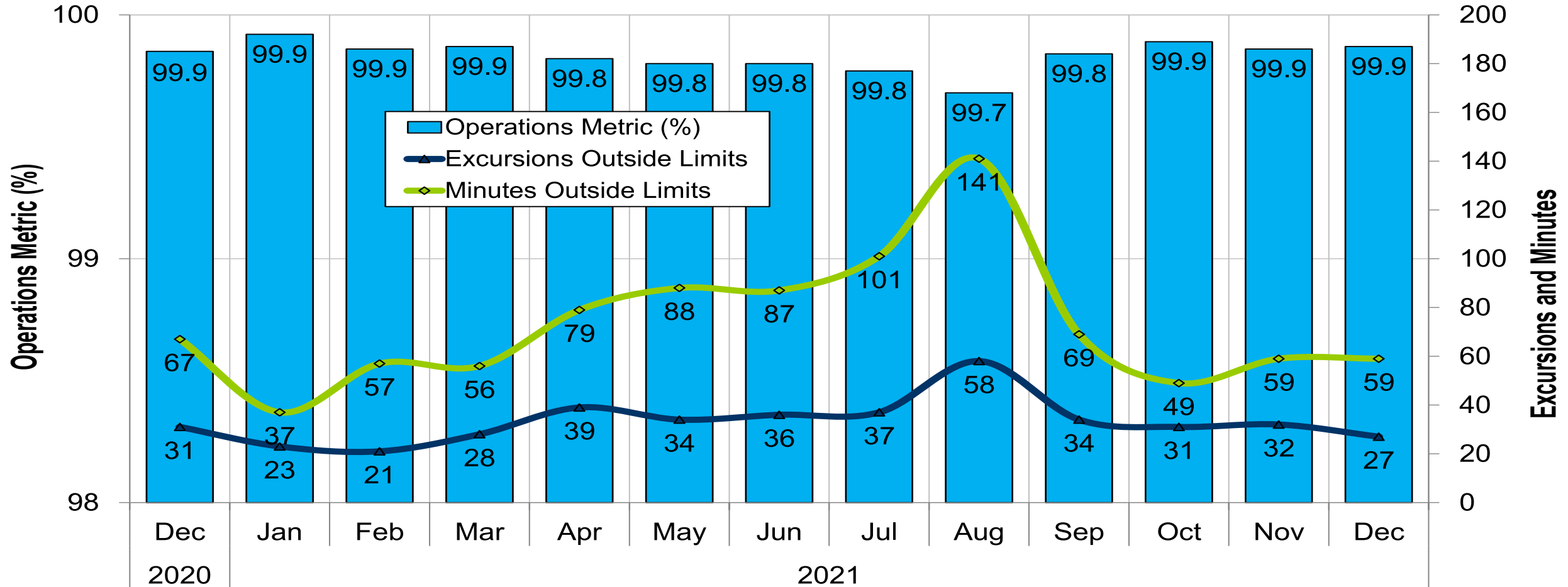
Hong Chen  
Senior Lead Engineer, Markets Coordination  
MC Webinar  
January 24, 2022

December 2021  
 Hourly Error: **1.70%** Peak Error: **1.62%**



# Daily Peak Forecast Error (December)

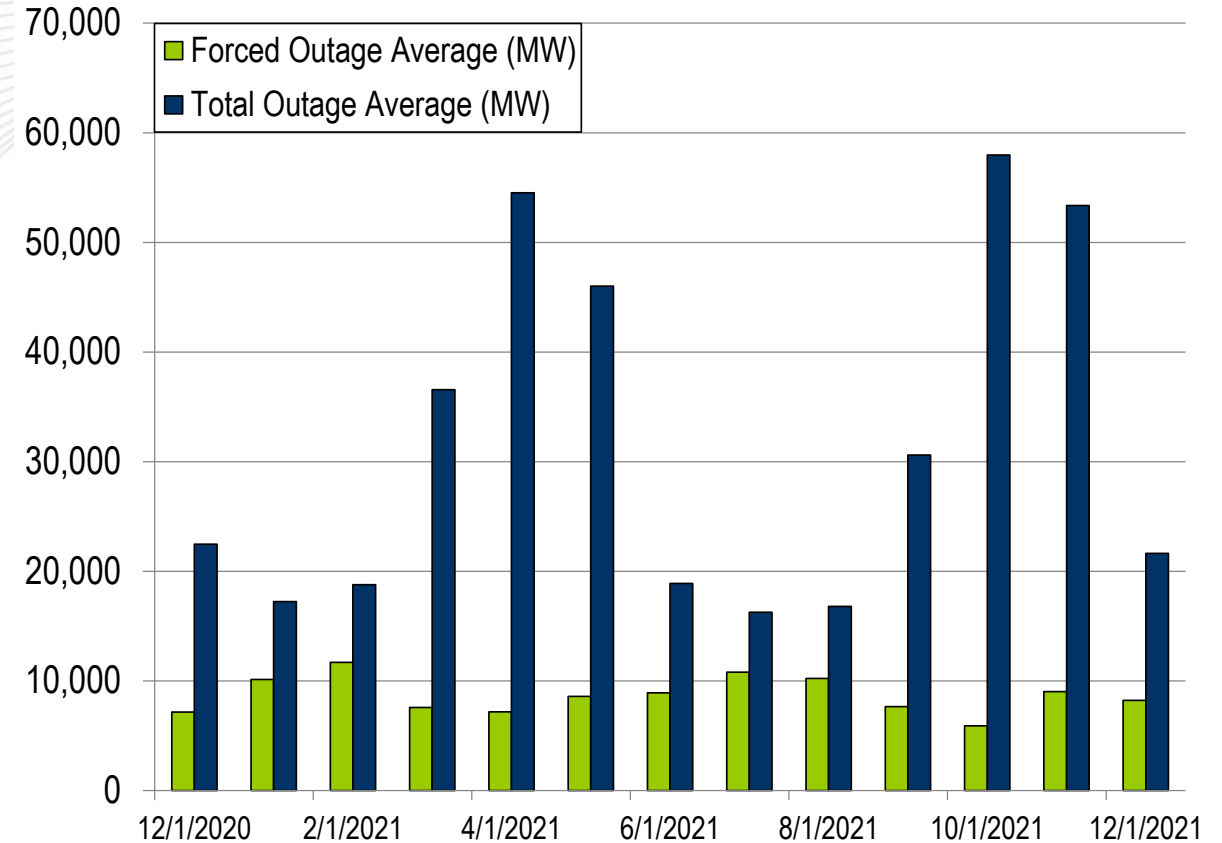
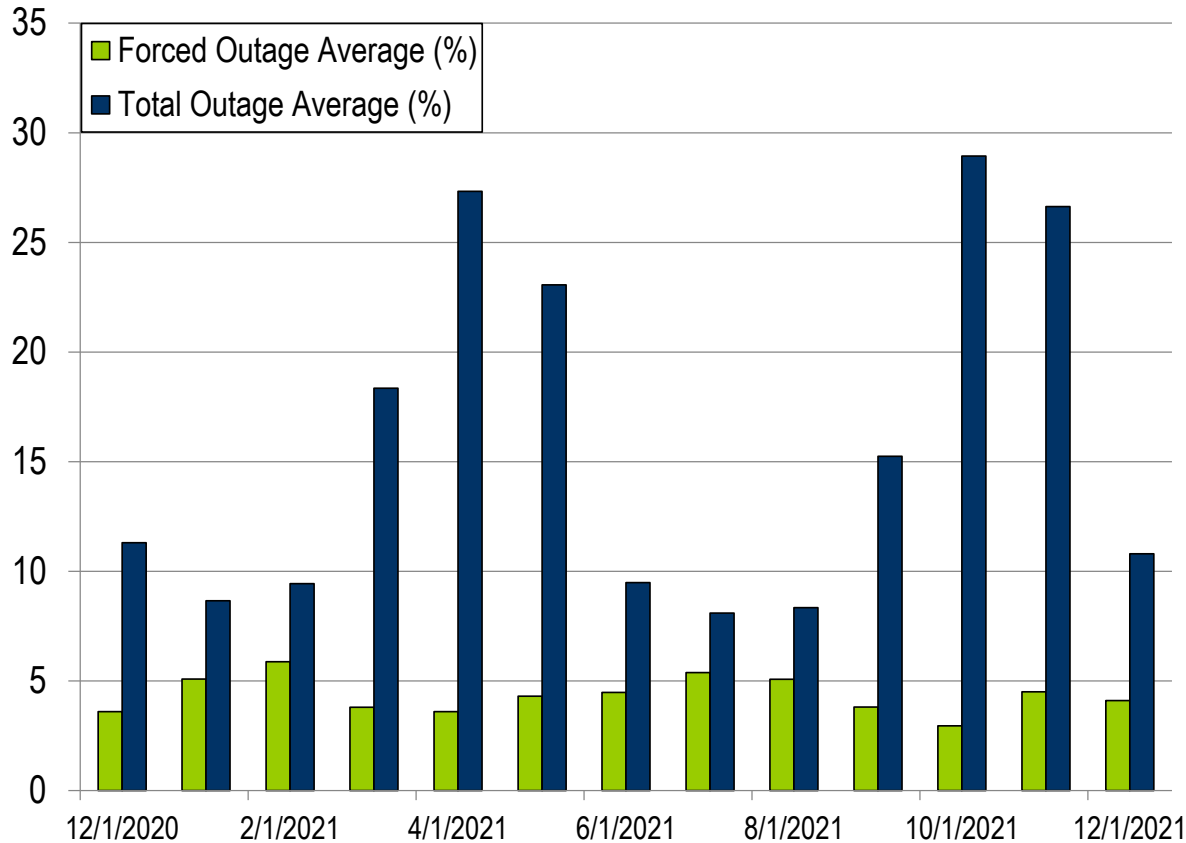




PJM's BAAL performance has exceeded the goal of 99% for each month in 2021.

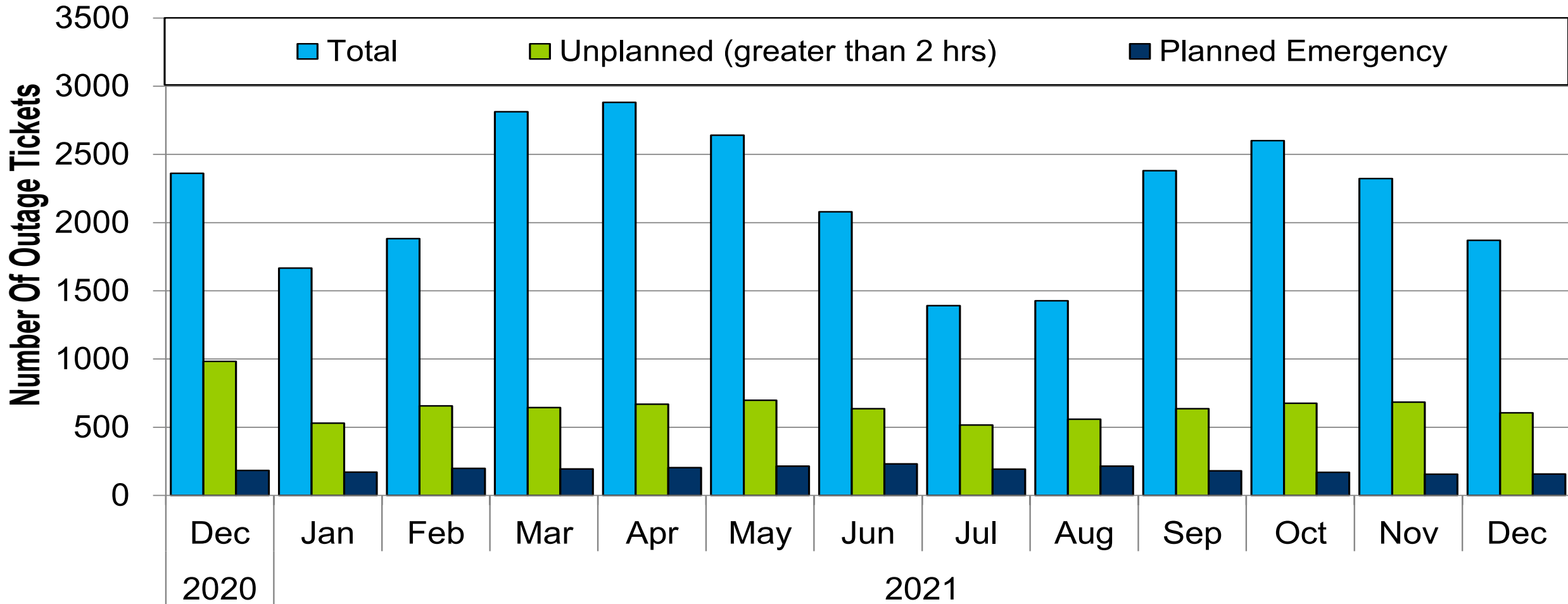
- One spinning event
- Two reserve sharing events with the Northeast Power Coordinating Council (NPCC)
- The following Emergency Procedures occurred:
  - 5 Post-Contingency Local Load Relief Warnings (PCLLRW)
  - 2 High System Voltages
  - 3 Shortage Cases Approved

- 3 Shortage Cases Approved
- The approved Shortage Cases occurred on:
  - 12/07/21:
    - 1 Shortage Case for 17:30
    - Approaching evening peak load
  - 12/08/21:
    - 1 Shortage Case for 09:10
    - 1 Shortage Case for 09:15
    - Morning peak load came in higher than forecast, reduced generation, reduced interchange, and Synchronized Reserve event occurred during same time



The 13-month average forced outage rate is 4.34% or 8,684 MW.  
 The 13-month average total outage rate is 15.83% or 31,646 MW.

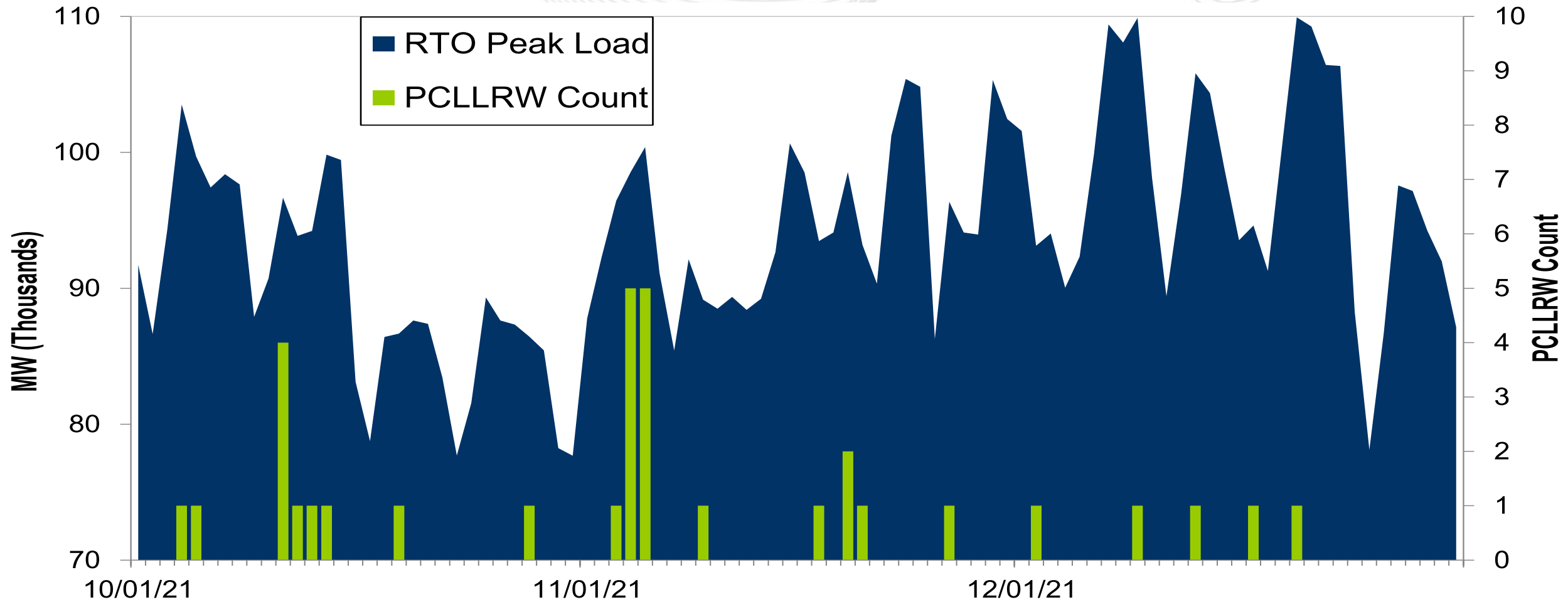
# 2020-2021 Planned Emergency, Unplanned, and Total Outages by Ticket



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	12/08/21	09:04:06	09:11:55	00:07:49	RTO	481.6	288.8

Event	Date	Start Time	End Time	Duration	Region	Tier 2 Assigned (MW)	Tier 2 Response (MW)	Tier 2 Penalty (MW)
1	12/08/21	09:04:06	09:11:55	00:07:49	RTO	1376.4	1376.4	0.0

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

Presenter:  
Hong Chen,  
[Hong.Chen@pjm.com](mailto:Hong.Chen@pjm.com)

SME:  
David Kimmel,  
[David.Kimmel@pjm.com](mailto:David.Kimmel@pjm.com)

System Operations Report



### Member Hotline

(610) 666 – 8980

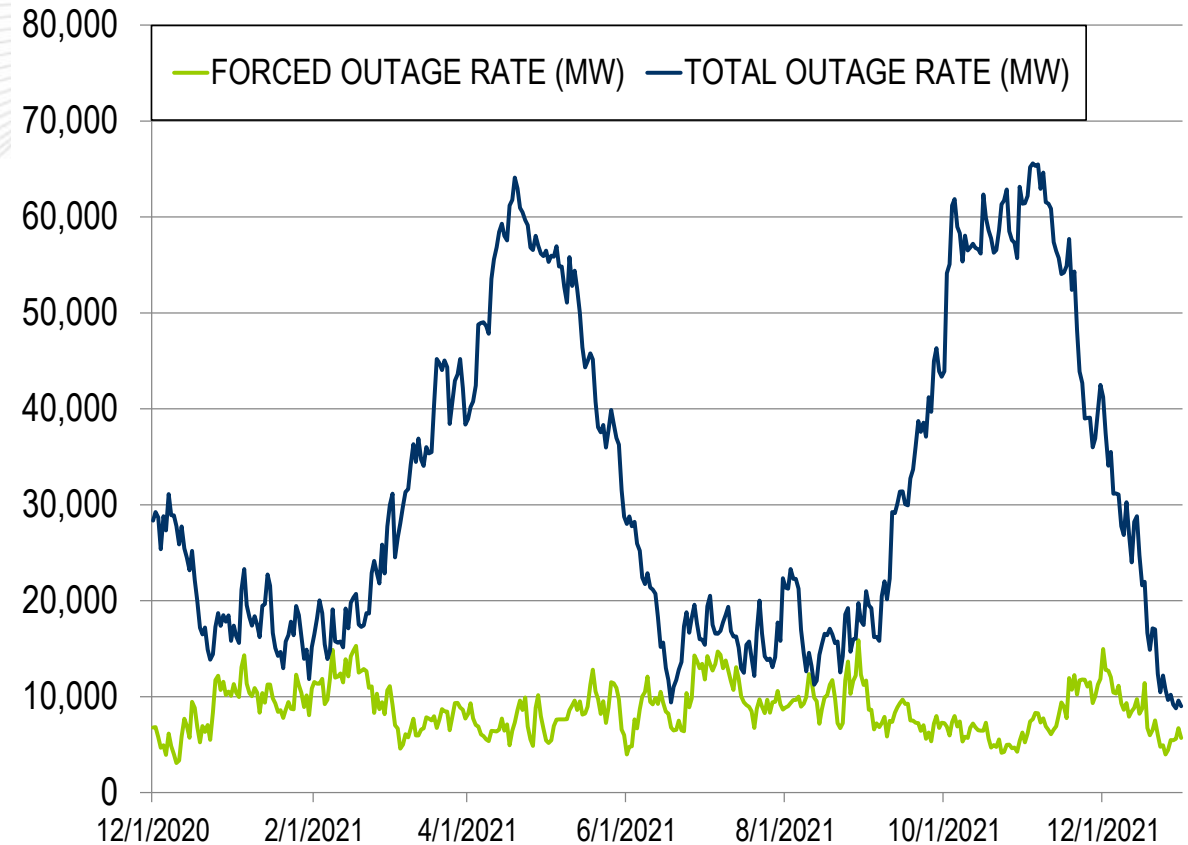
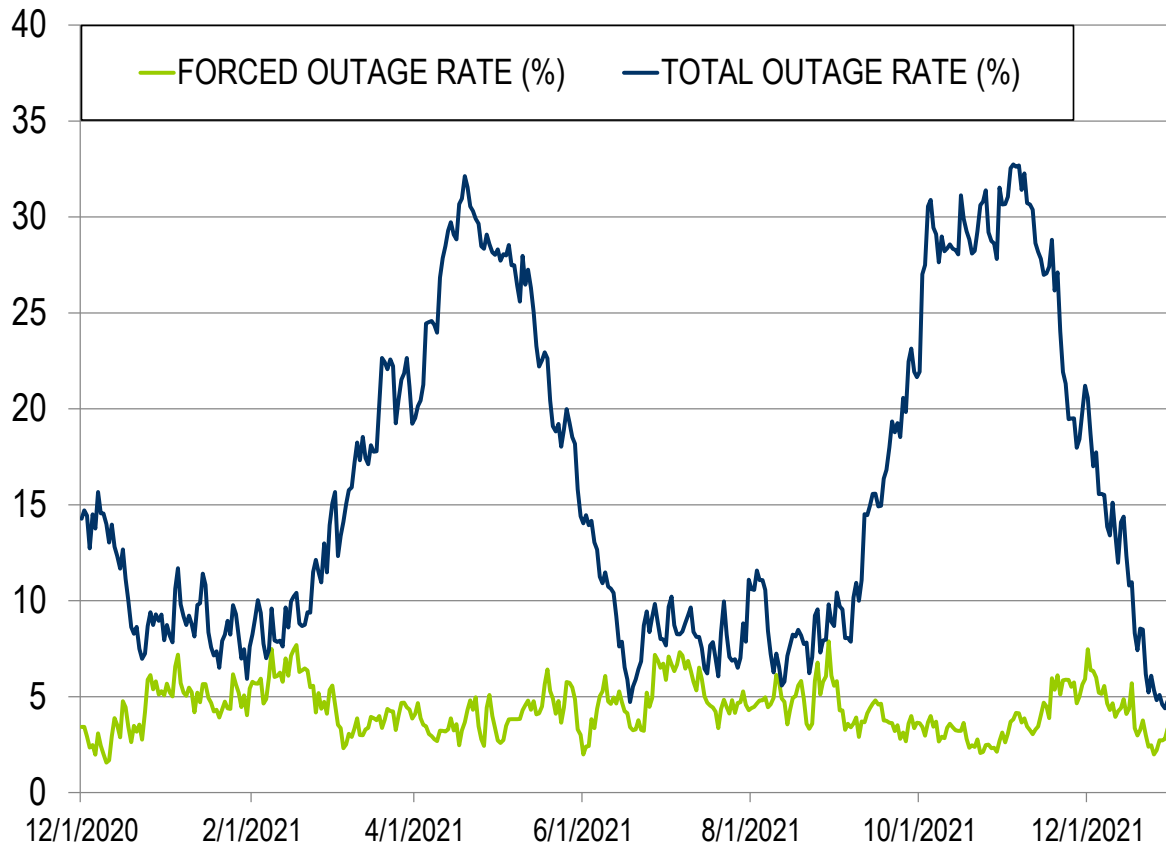
(866) 400 – 8980

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

# Appendix

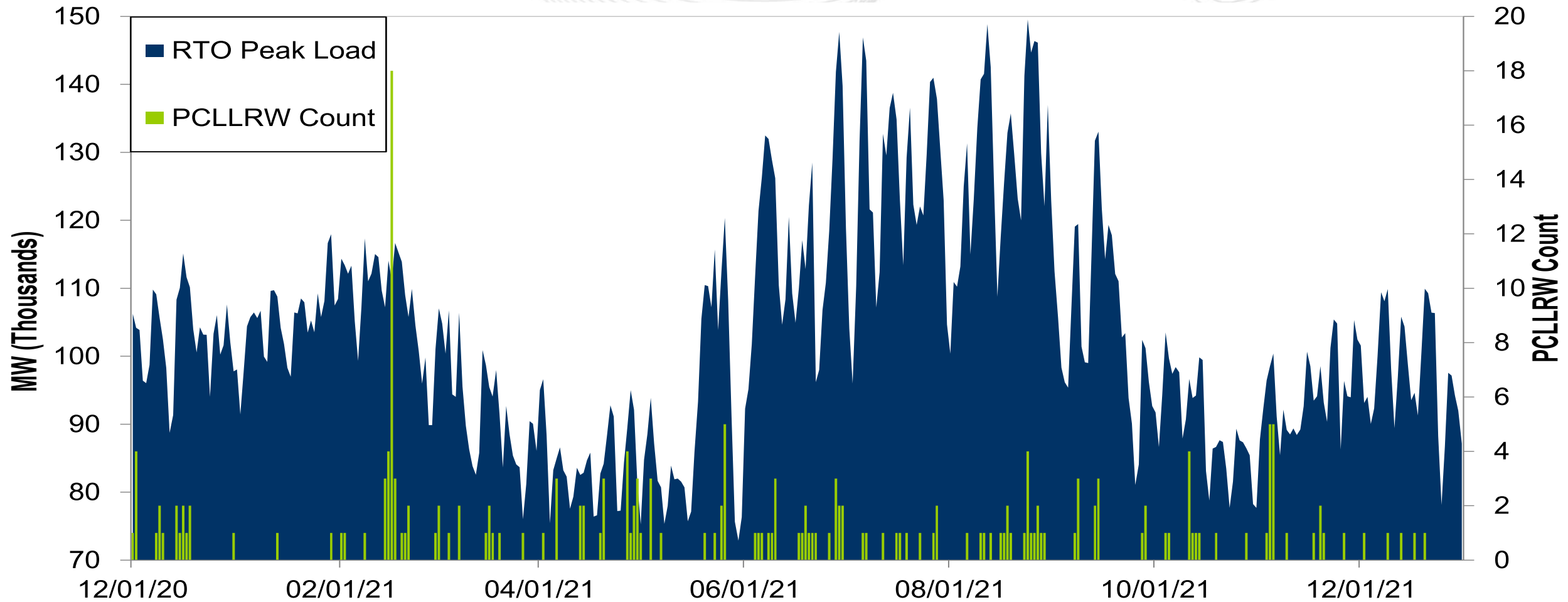
## Goal Measurement: Balancing Authority ACE Limit (BAAL)

- 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 4.34% or 8,684 MW.  
 The 13-month average total outage rate is 15.83% or 31,646 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)

