



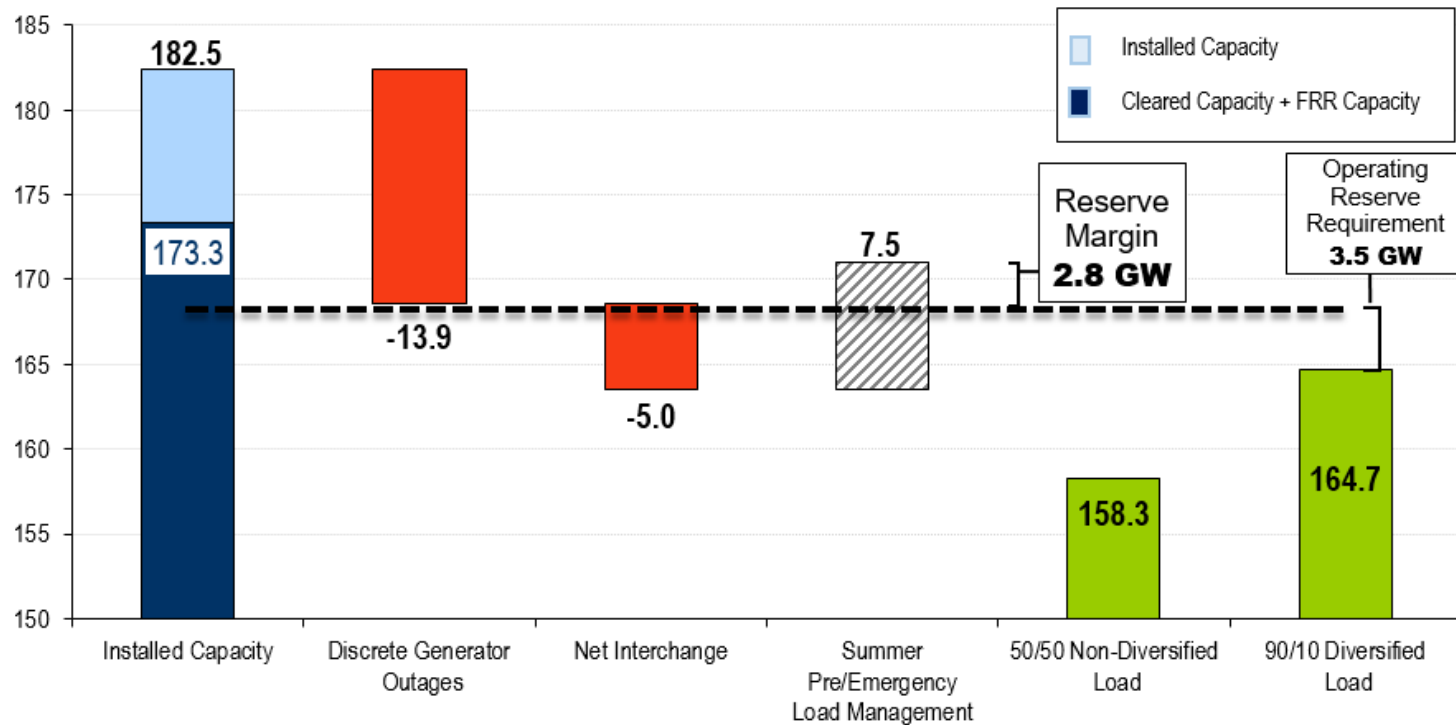
PJM Seasonal Assessment – Summer 2024

Kevin Hatch Sr. Manager Dispatch
System Operations
May 9, 2024



Summer 2024 Preliminary Capacity Projections

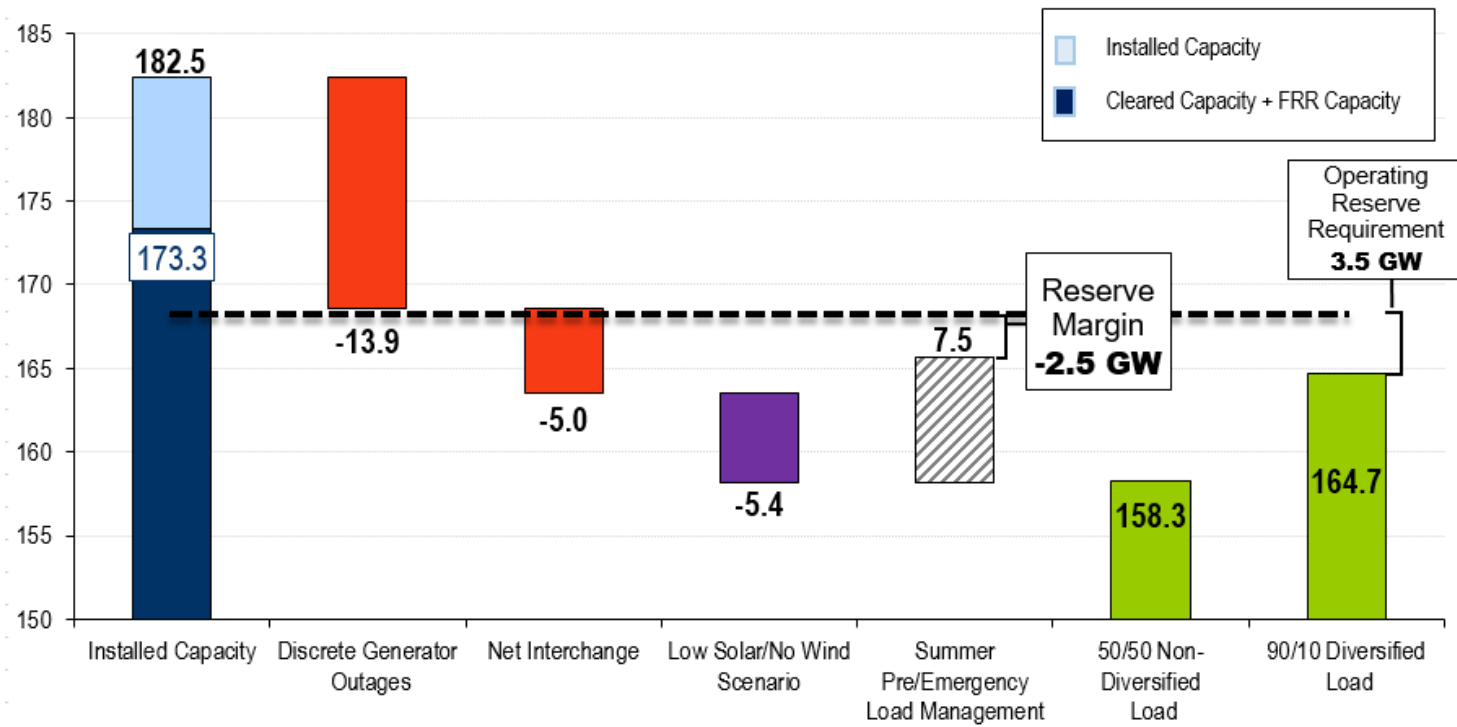
Summer 2024 OATF Case Overview (Preliminary)





Summer 2024 Preliminary Capacity Projections

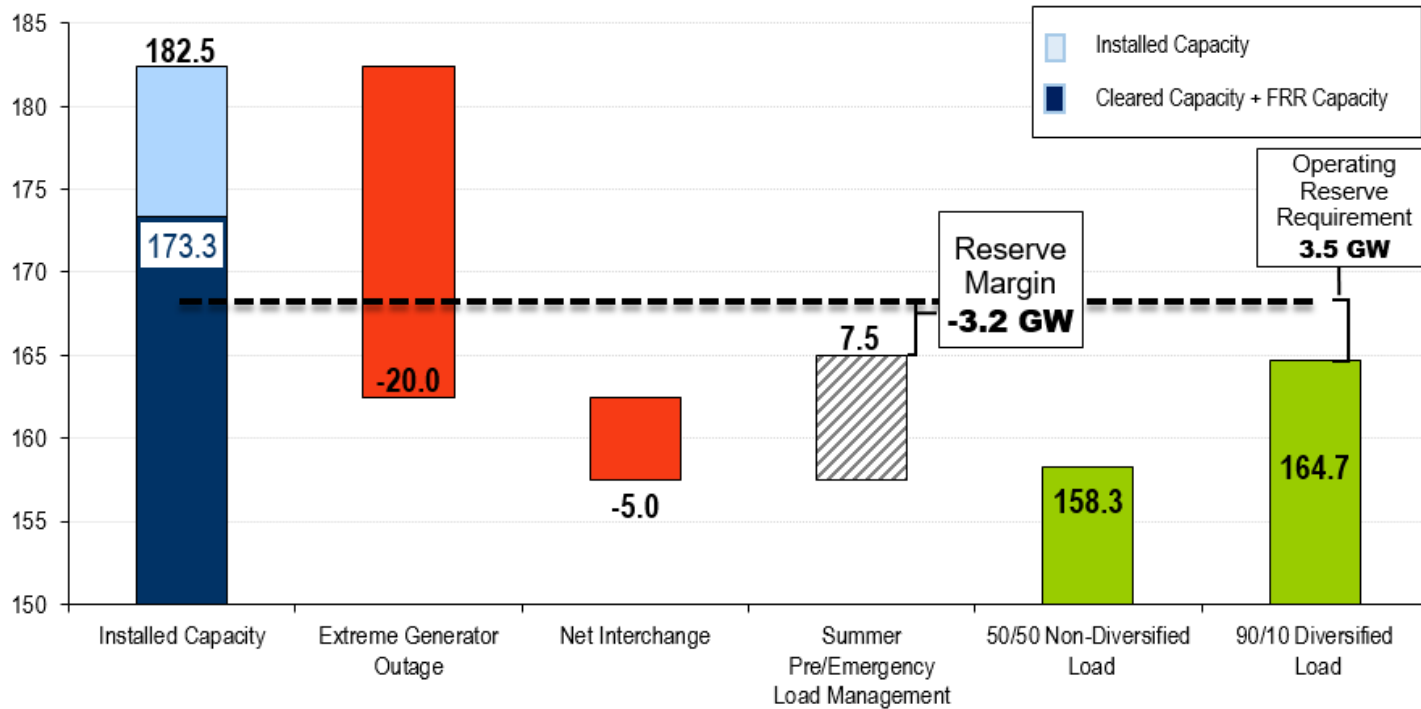
Summer 2024 Low Solar and No Wind Scenario Overview (Preliminary)





Summer 2024 Preliminary Capacity Projections

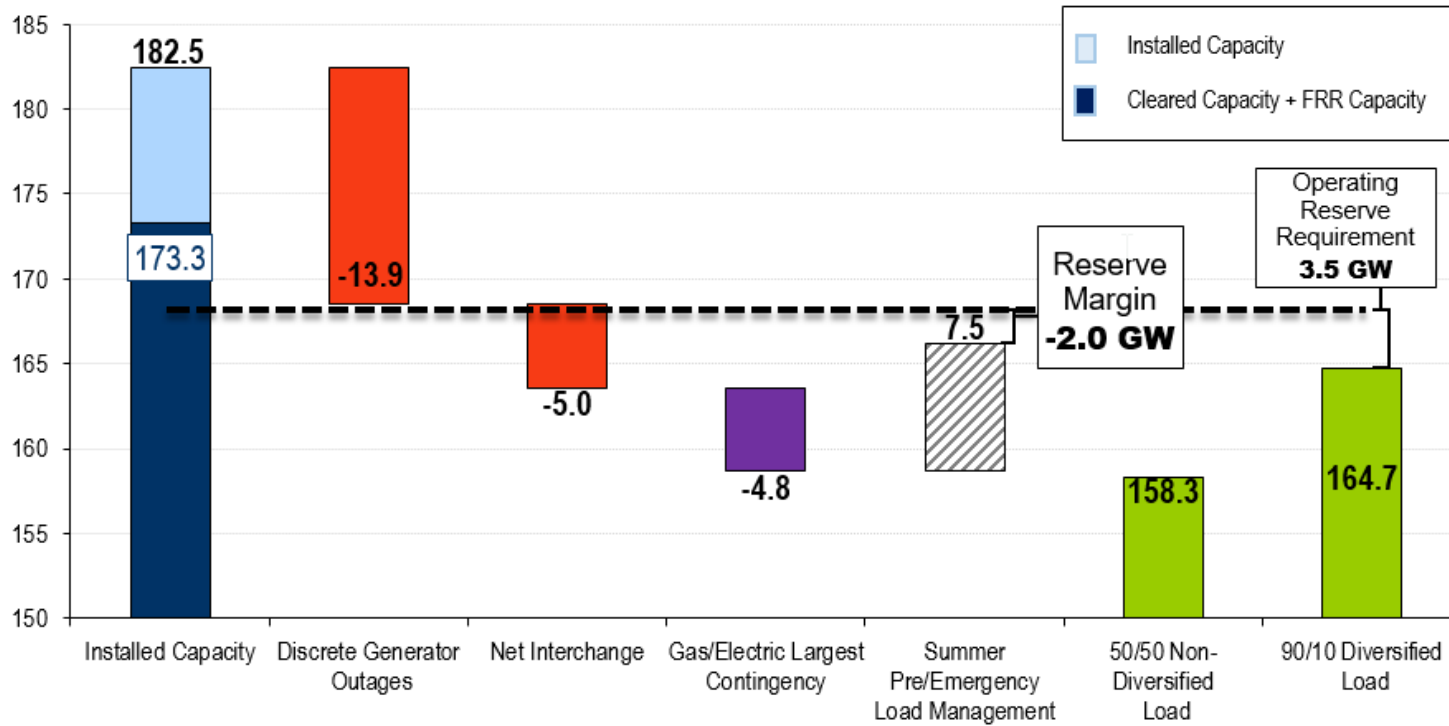
Summer 2024 Extreme Generator Outage Scenario Overview (Preliminary)





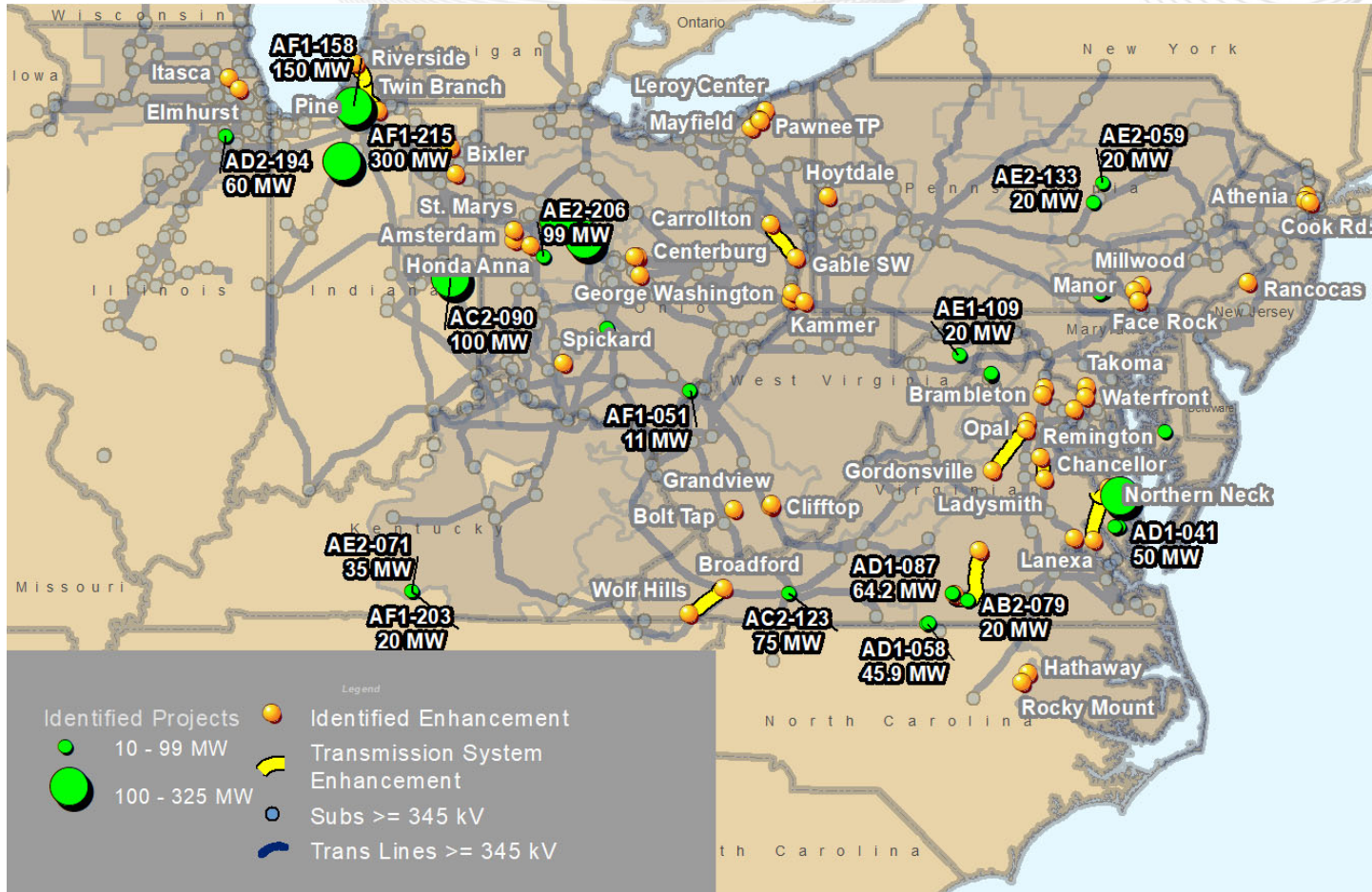
Summer 2024 Preliminary Capacity Projections

Summer 2024 Largest Gas/Electric Contingency Scenario Overview (Preliminary)





Upcoming Generation and Transmission Projects



50/50 Non-diversified Peak Load Base Case

LAS Load Forecast	158,307 MW
RTO Case Interchange	4,000 MW** (Exporting)
PJM RTO Installed Capacity	182,455 MW (preliminary)
Discrete Generator Outages	13,909 MW

**OATF Case Interchange (-4,000 MW) = Forecasted Net Interchange(-5,000 MW) + Pseudo-Tie Adjustment (1,000 MW)

Peak Load Analysis

- No transmission system reliability issues identified.



Preliminary 50/50 Peak Load Study Results

- No reliability issues identified for base case and N-1 analysis.
- Re-dispatch and switching required to control local thermal or voltage violations in some areas.
- All networked transmission voltage violations were controlled by shunt and tap adjustments

Sensitivity Studies	Results
External contingencies that could impact PJM reliability	No reliability concerns
N-1-1 Relay trip conditions	No reliability concerns
Max-Cred Contingency Analysis	No reliability concerns
90/10 Load Forecast study (164,698 MW diversified peak load forecast)	No reliability concerns
Solar and Wind Generation Sensitivity Study	No reliability concerns
Transfer Interface Analysis	No reliability concerns
BGE/PEPCO Import Capability	No reliability concerns



PJM Energy Transition

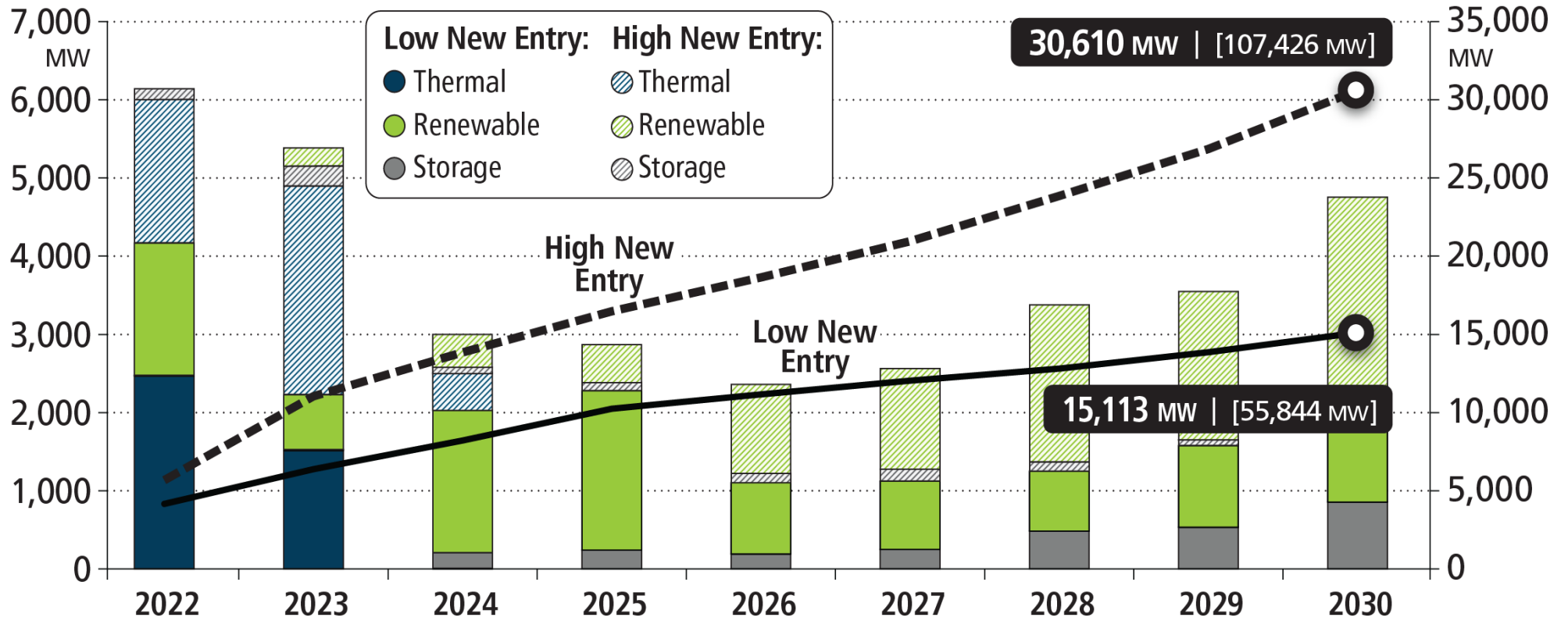
Demand Expectations



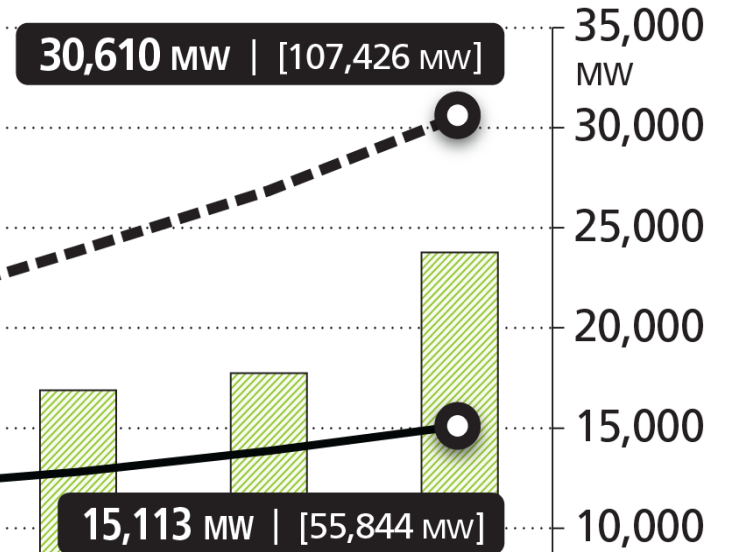


PJM Forecasted New Entry (2022–2030)

Annual Added Installed Capacity



Total Added Capacity [Nameplate]

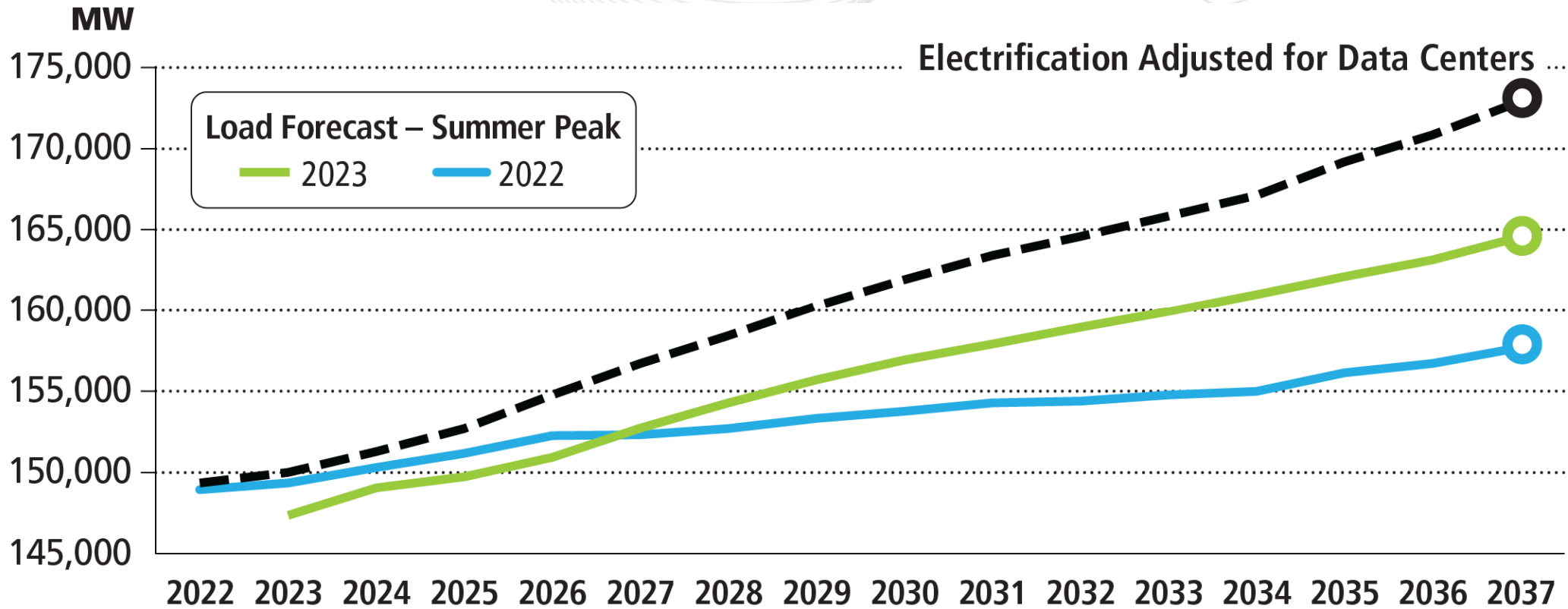


Renewable expansion includes storage, Effective Load Carrying Capability impacts; building nameplates of 56-108 GW-energy



New Entry Expectation by 2030

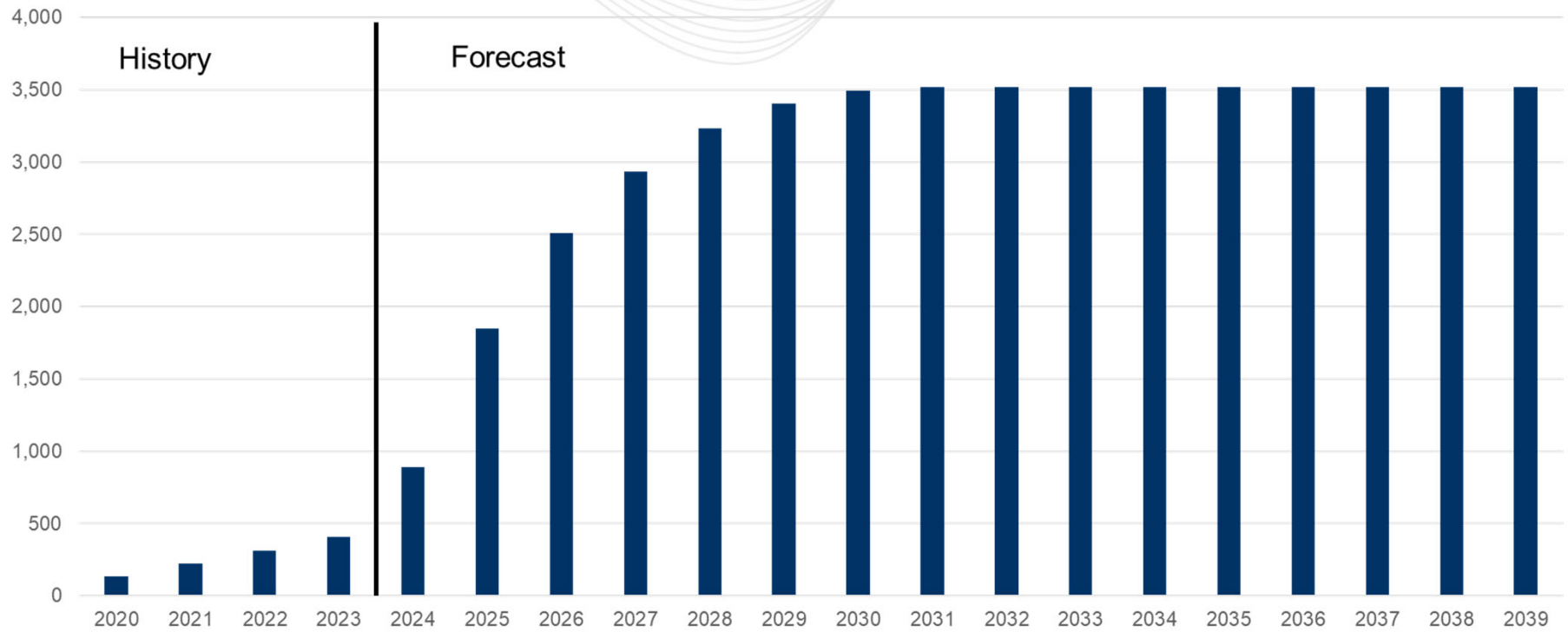
Resource Type	Nameplate (GW)		Installed Capacity (GW)	
	Low New Entry	High New Entry	Low New Entry	High New Entry
Natural Gas	3.8	8.8	3.8	8.8
Offshore Wind	10.0	10.3	2.6	4.1
Onshore Wind	14.3	43.3	1.0	6.7
Solar	23.9	40.4	4.6	6.1
Battery	3.4	3.6	2.8	3.2



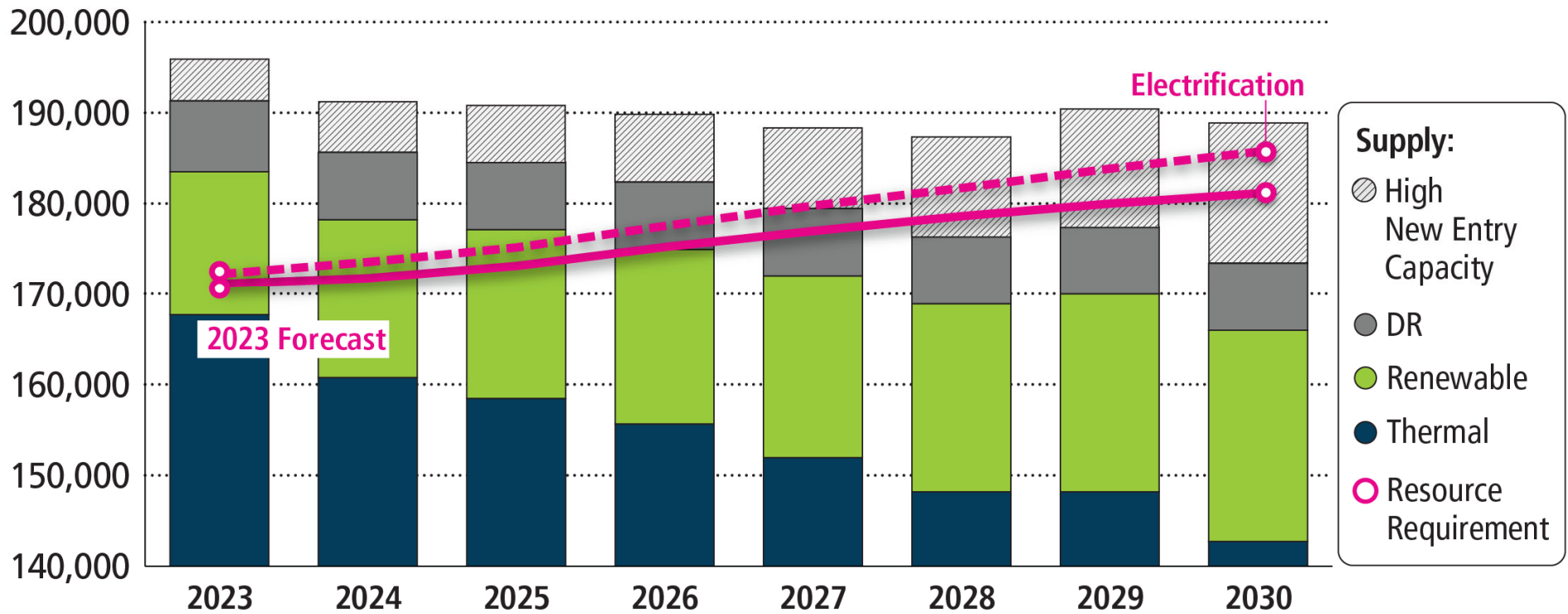


AEP Zone Data Centers

AEP Total Data Center Peak Load
History and Forecast



MW ICAP





Appendix

Winter Operations Recap



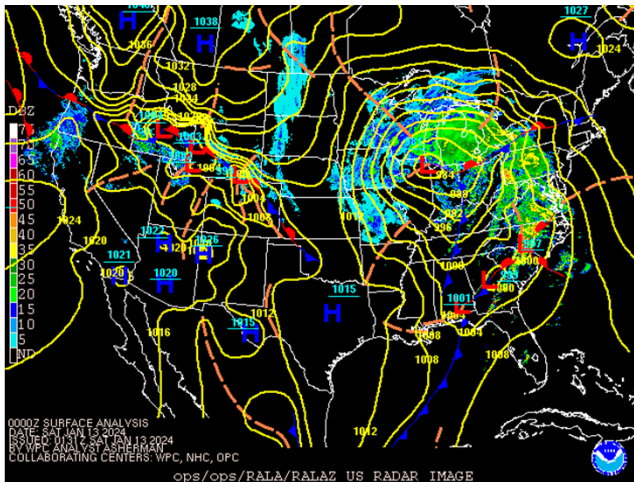
Winter Operations Recap



Enhancements to Winter Readiness

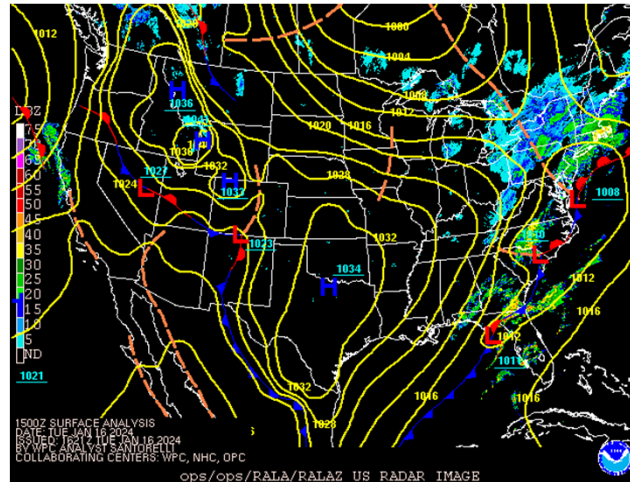
- **Pre-winter generation resource site visits**
 - PJM coordinating with IMM and RF to develop plan and schedule
 - Targeted start pre-winter in 2024/2025
- **Electric Gas Coordination Sr. Task Force**
 - Stakeholders continue to discuss short and long term solution options
 - Short term focus is on situational awareness improvements that can be implemented prior to winter of 2023/24
- **Illinois Climate and Equitable Jobs Act: PJM Reliability Guidance**
 - Guideline allows PJM to run units only for reliability reasons after emissions hours are reached

Storm #1 – “Gerri” January 12–13



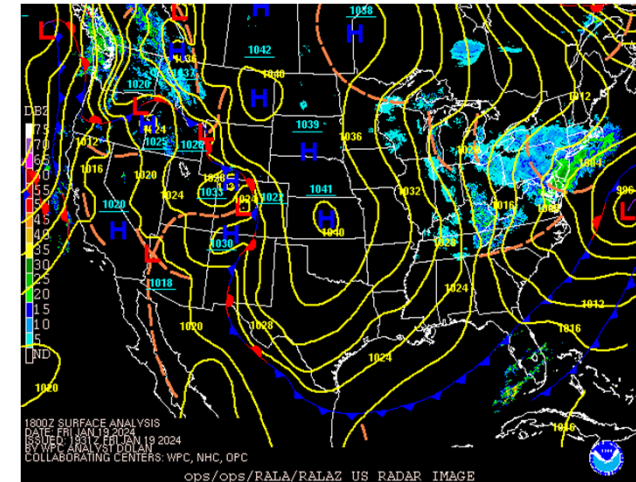
- Heavy snow in COMED, strong winds in Western Region
- Heavy rain & strong winds from Appalachians eastward

Storm #2 – “Heather” January 15–16



- Snow & ice from Ohio Valley eastward
- Nearly 2-year-old streak of less than 1” of snow broken on I-95 corridor

Storm #3 – “Indigo” January 18–19



- Snow over much of RTO
- Heaviest snow over Mid-Atlantic

Risk-based scheduling approach – load forecast, outages, natural gas availability

- Units with extended start times were evaluated and started early to ensure units were online before extreme cold weather settled in. Strategy was to have units warm and ready to ramp up.
- Evaluated units that have not operated in the past eight weeks for consideration for additional start time

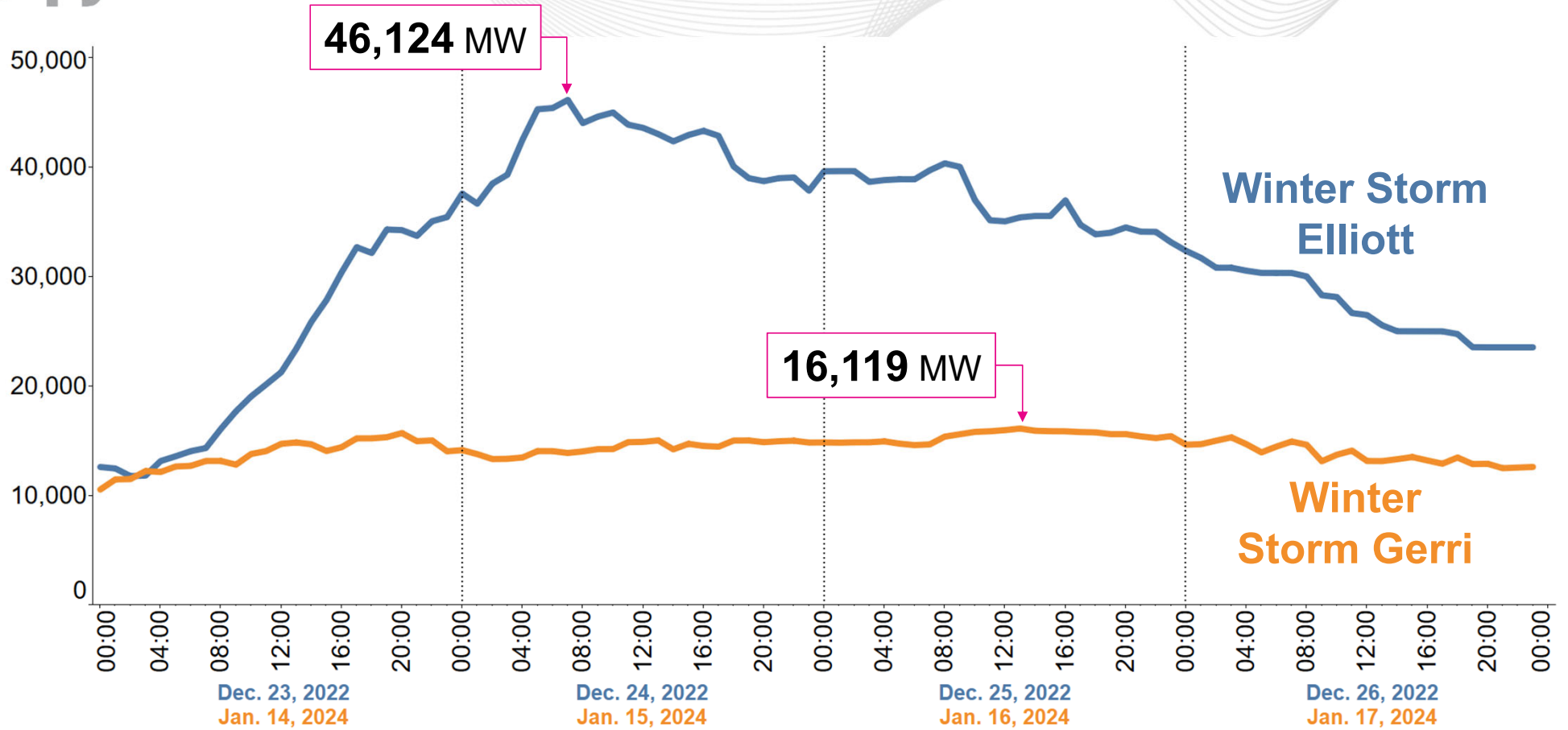
Reliability cases were conducted, and units were committed for reliability based on anticipated congestion and capacity projections.

Both Flexible and Inflexible Day-Ahead CTs were given advance notice for projected run period for additional time to procure fuel and to notify PJM if they would not be able to operate.

- Considerations were given to min. down time on units to determine if they would be able to come back in time for higher projected loads.
- Extended holiday weekend gas nomination period was considered when making commitments to gas units.



WSG vs. WSE Forced Outages Comparison



Note: 16,653 MW discrete generator outages modeled in winter OATF analysis. Winter Storm Gerri outage data shown is collected from eDART and considered preliminary.

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