Item 4.2: ERCOT Maximum Daily Resource Planned Outage Capacity Methodology Revision

–REVISED*

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Board of Directors Meeting

ERCOT Public
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* Revised slide 7 language in Key Takeaway

[Board/Committee] Request

Why this is being presented today:

PURA Sec. 35.0021 (f) The independent organization certified under Section 39.151 for the ERCOT power region shall review, coordinate, and approve or deny requests by providers of electric generation service described by Subsection (a) for a planned power outage during any season and for any period of time

Protocol 3.1.6.13 requires the methodology it uses to calculate the Maximum Daily Resource Planned Outage Capacity and any revisions thereto shall be approved by the ERCOT Board of Directors

To request a vote from the Board to:

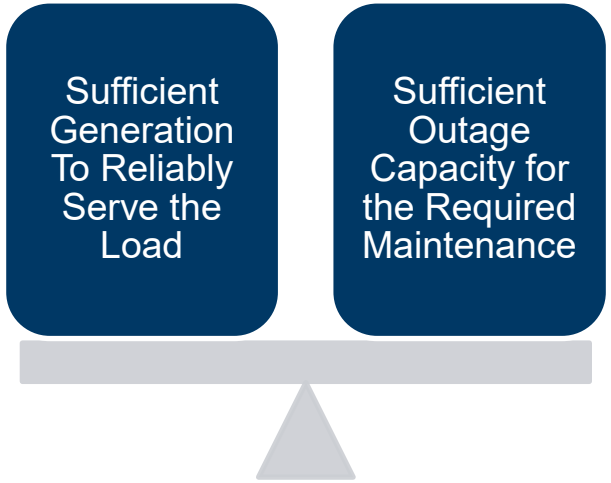
1. Approve the revision of the methodology used to calculate the Maximum Daily Resource Planned Outage Capacity

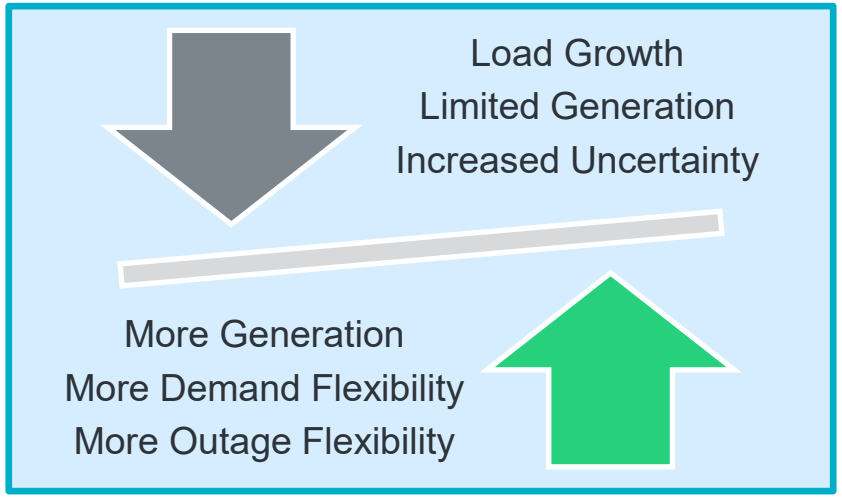
Implementation of Maximum Daily Resource Outage Capacity

- To meet PURA 35.0021, NPRR1108 (ERCOT Shall Approve or Deny All Resource Planned Outage Requests) was proposed in November 2021, approved in July 2022, and implemented in August 2022 after considerable debate
  - Part of the resolution was for the Board of Directors to approve any revisions to the methodology for calculating the Maximum Daily Resource Planned Outage Capacity (MDRPOC)
- MDRPOC was implemented to determine the maximum outage capacity can be reliably approved, based on a calculation and assumptions defined in the methodology document
  - The daily MDRPOC values for the next five years are posted, and thermal resources can submit scheduled outages up to the MDRPOC values on a first come basis
  - Outages that exceed the MDRPOC within the duration of the outage are automatically rejected
- Due to changes in market conditions, ERCOT is proposing revisions to the MDRPOC methodology

Key Takeaway: The approval of NPRR 1108 was contested, resulting in a need for the Board to approve revisions to the MDRPOC methodology

Needs to Support Outages and Maintain Sufficient Available Resources





- Resource mix and projected load growth have made the existing methodology unworkable.
  - MDRPOC would drop significantly due to projected load growth and would be unable support the historical resource planned outage levels
  - ERCOT provided an update to Technical Advisory Committee (TAC) in November 2024 with the identified issues and recommend to freeze the MDPROC update until a revision to the methodology to address the issues is approved

Key Takeaway: Changes to the MDRPOC methodology are needed due to load growth

Need for Revisions to the MDRPOC Methodology

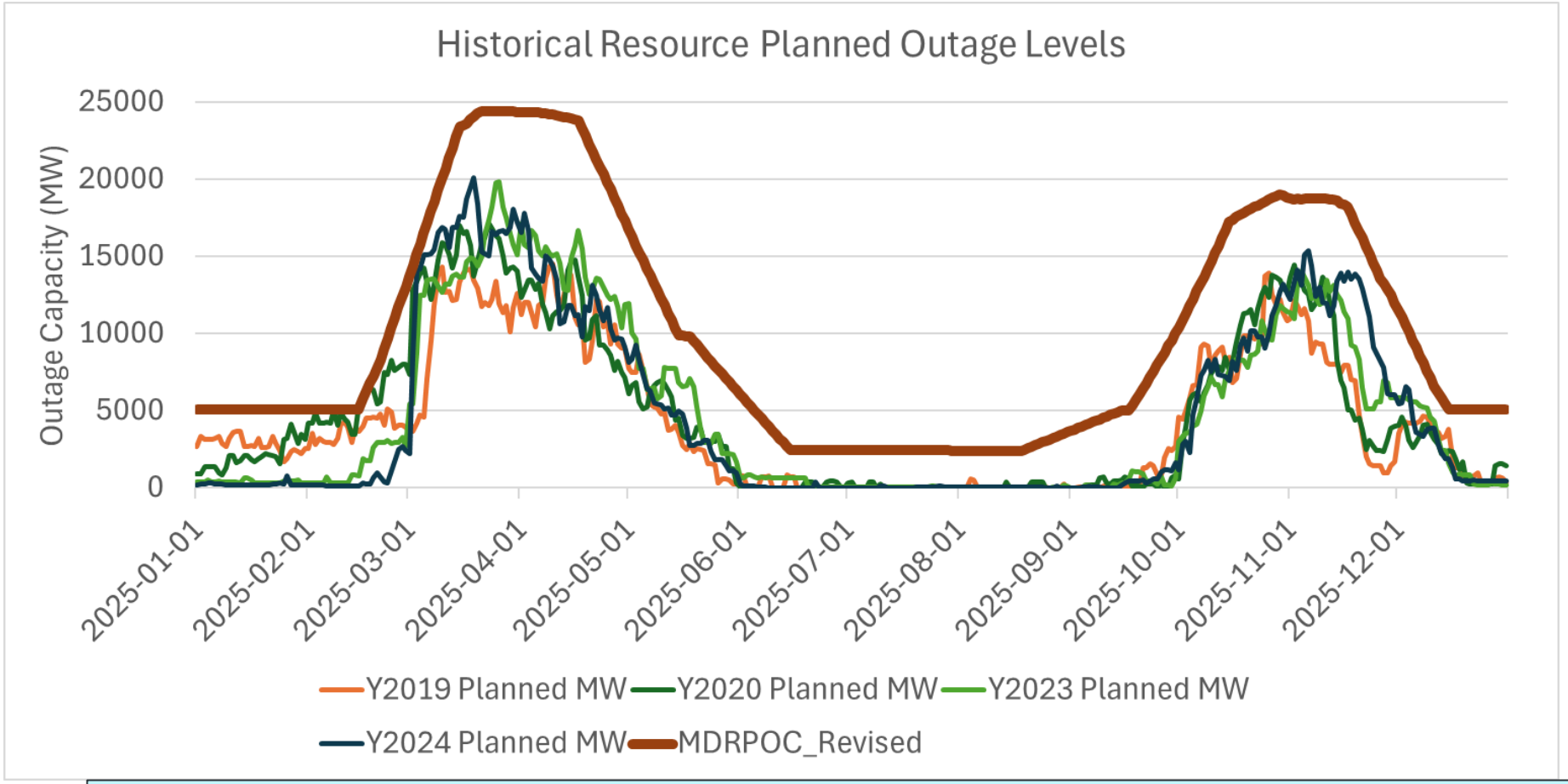
- A new risk-based approach is proposed to MDRPOC for Thermal Generation Resources 7-days up to 60 months address the challenges and provide improvements to support Resource Planned Outages and its impact to the grid reliability.
  - To provide sufficient outage capacity
  - To quantify the risk of the determined MDRPOC
  - To quantify the impact of risk for the future MDRPOC adjustments

<u>Proposed Methodology</u>

- Use probabilistic analysis to calculate MDRPOC for first year and apply to all subsequent years
  - Provide average MDRPOC of 2500 MW for the summer months and 5000 MW for the winter months
  - MDRPOC for Intermittent Renewable Resources (wind and solar) and Energy Storage Resources are based on 110% of the historical maximum outage capacity in the previous three years
  - MDRPOC for Energy Storage Resources will be implemented after RTC+B implementation
- Use probabilistic analysis to calculate the risk of allowing this level of MDRPOC

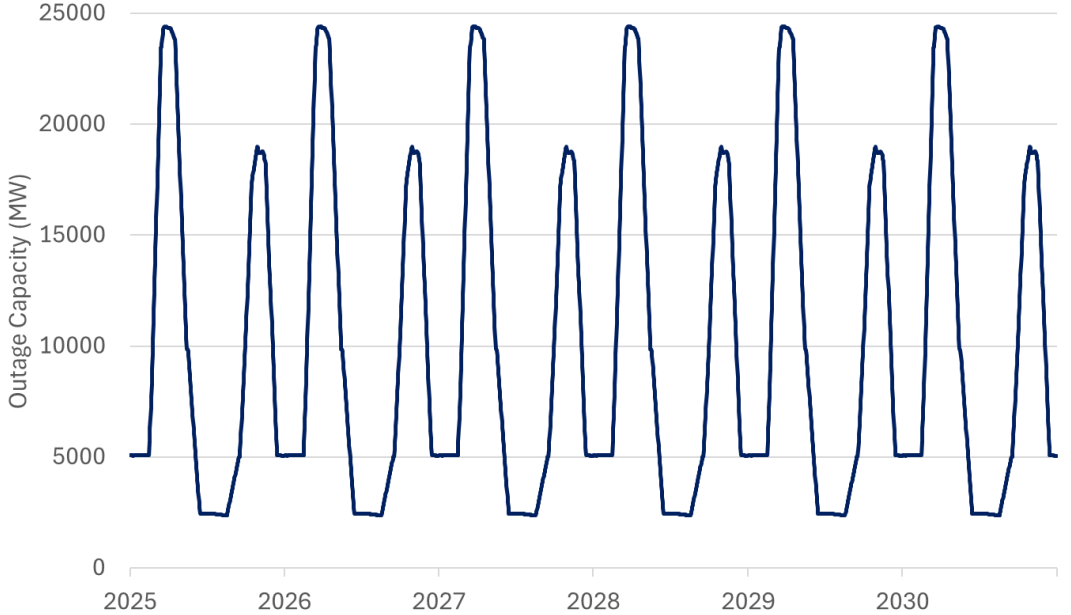
Key Takeaway: ERCOT is proposing a new probabilistic MDRPOC methodology

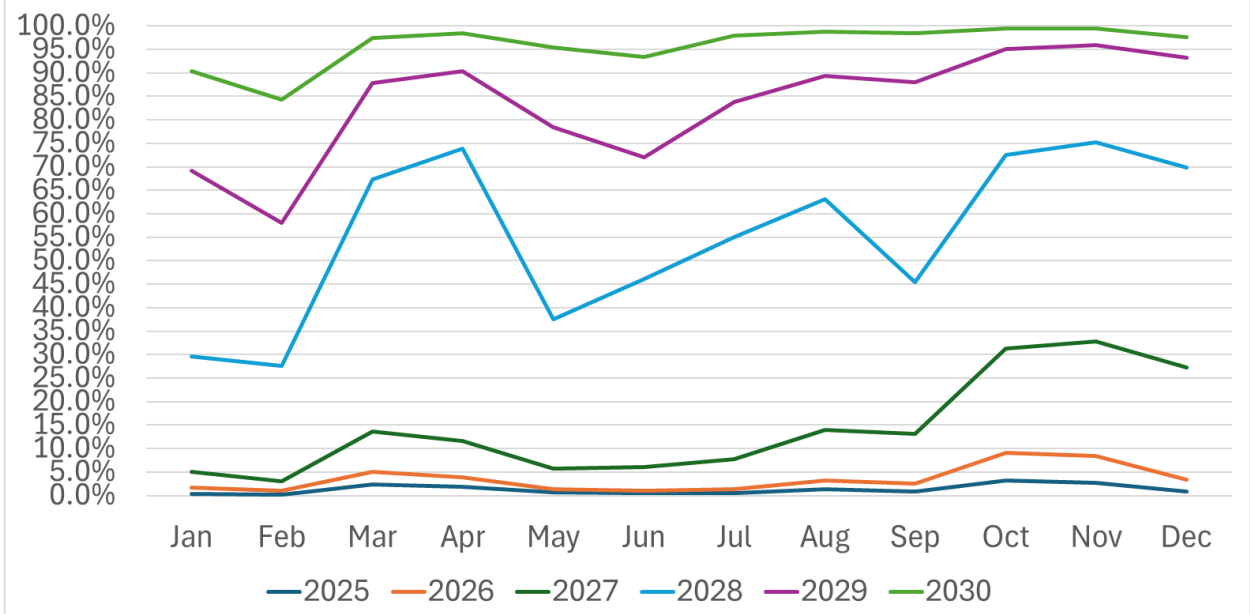
Comparison of the revised MDRPOC and historical Resource Planned Outages



Key Takeaway: Revised methodology provides sufficient outage capacity and maintains available resource capacity to meet the near-term projected load

Proposed Revision to MDRPOC for Thermal Generation Resources





Key Takeaways

- This revision will provide the same level of MDRPOC in future years (shown in brown line on previous slide)
- The risk of falling below target reserves is calculated and increases significantly for future years with expected growth in load

Methodology Review and Revision Progress

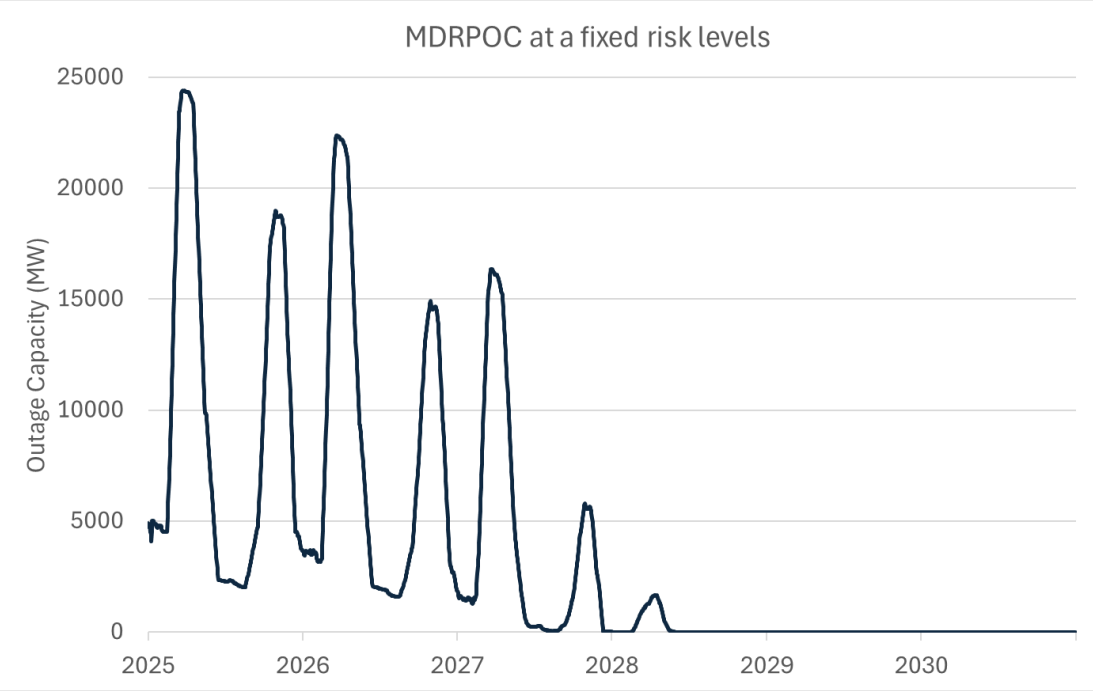
- Timeline of stakeholder comments and review of the ERCOT's proposed methodology revision
  - November 2024: ERCOT provided an update to TAC on the identified challenges and proposal to implement risk-based methodology
  - March 2025: ERCOT provided a status update to TAC on the developed risk-based methodology
  - April 2025: ERCOT provided a status update to TAC on the preliminary risk-based calculation
  - May 2025
    - Stakeholders provided their recommended changes to WMWG
    - ERCOT presented the proposed methodology revision and preliminary result to TAC
    - According to Protocol 3.1.6.13 requirements, ERCOT issued a market notice on May 23, 2025, to request comments on the proposed methodology revision by June 9, 2025

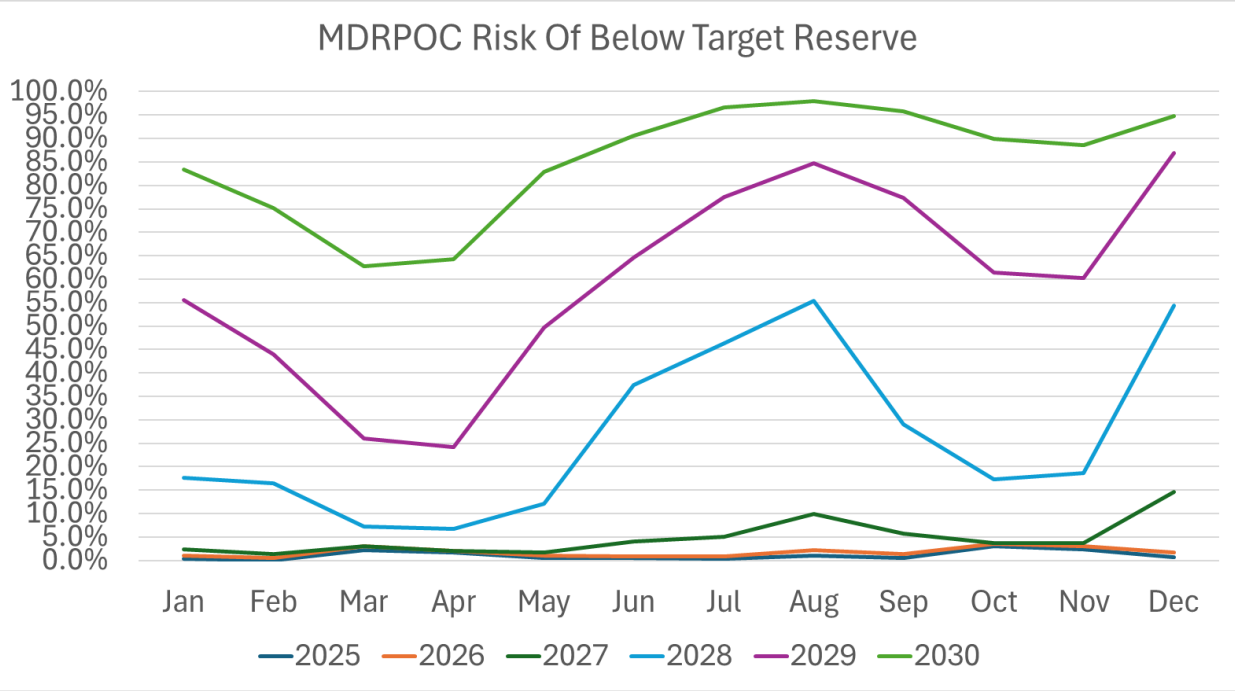
Appendix

Notable Input Changes to MDRPOC calculation for Thermal Generation Resources for 7 days - 60 months in the future

Notable Input Assumption Changes	Existing Methodology (Deterministic)	Proposed Revision (Probabilistic)
Wind and Solar	10th percentile of hourly historical wind and solar output for the peak load hours of the same season for the previous three years	Represented by a probabilistic distribution based on the historical performance in the previous three years
Load Forecast	50th percentile of historical load profile	Represented by a probabilistic distribution considering the weather data in the preceding 15 years
Unplanned Outage	99th percentile of unplanned outages for the peak load hours of the same season in the previous three years	Represented by a probabilistic distribution based on the historical performance in the previous three years
Energy Storage Resources	Not included	Included with assumed capacity contribution
Other Inputs	No Changes to other inputs, including thermal generation resources, hydro generation resources, switchable generation resources, private use network, non-synchronous tie, targe reserve level, and forecasted demand reduction by price-responsive demand.	

MDRPOC for Thermal Generation Resources at a Fixed Risk Level





- **Takeaways**
  - To maintain a fixed risk level, MDRPOC would be reduced in the future years due to insufficient new resource commitments and projected load growth
  - Higher risk is projected for the future years even with zero MDRPOC