

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

Shun Hsien (Fred) Huang
Director, Operations Support

**Board of Directors Meeting** 

ERCOT Public June 23-24, 2025

## [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



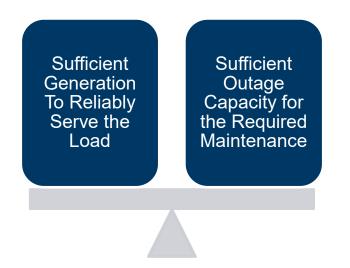
### Implementation of Maximum Daily Resource Outage Capacity

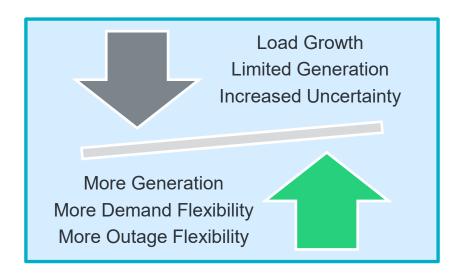
- To meet PURA 35.0021, NPRR1108 (ERCOT Shall Approve or Deny All Resource Planned Outage Requests) was proposed in November 2021, approved in July 2022, and implemented in August 2022 after considerable debate
  - Part of the resolution was for the Board of Directors to approve any revisions to the 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 7days 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

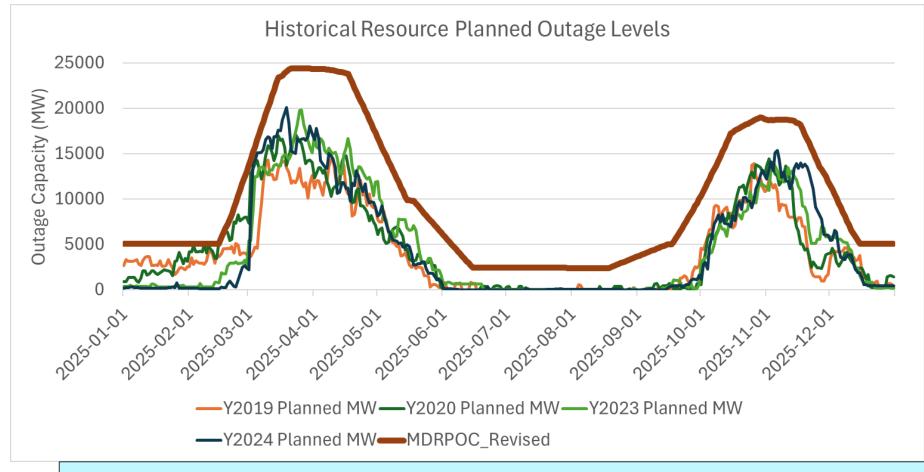
### Proposed Methodology

- 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

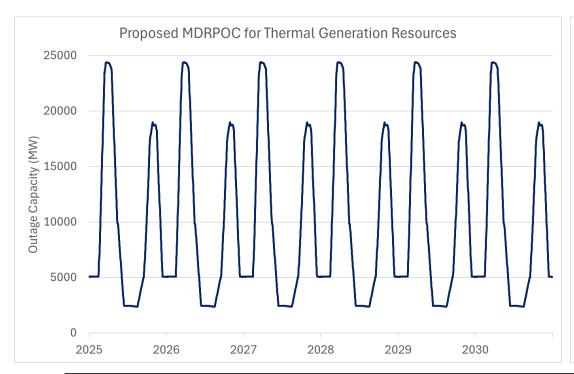
# Comparison of the revised MDRPOC and historical Resource Planned Outages

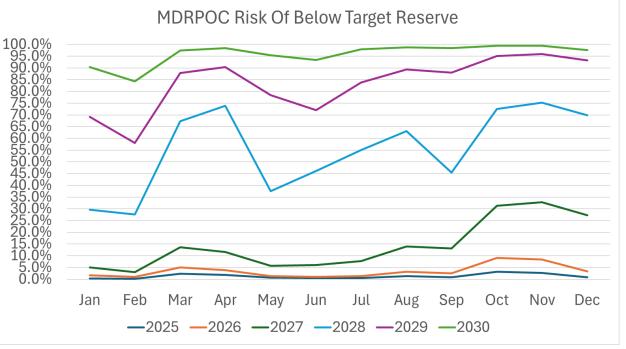


**Key Takeaway:** Revised methodology provides sufficient outage capacity and maintains available resource capacity to meet the near-term projected load



### **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 following 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**

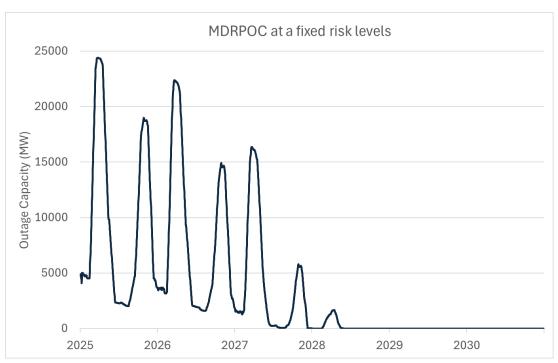


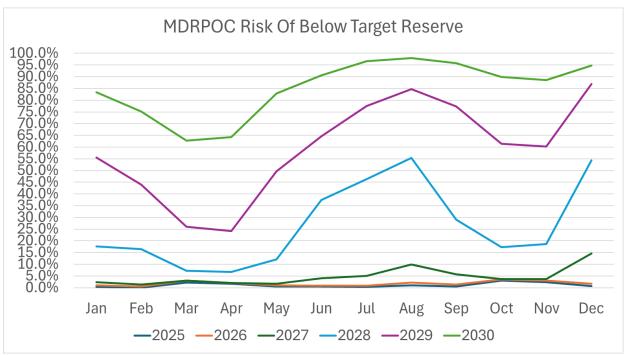
# Notable Input Changes to MDRPOC calculation for Thermal Generation Resources for 7 days - 60 months in the future

Notable Input Assumption Changes	Existing Methodology (Deterministic)	Proposed Revision (Probabilistic)
Wind and Solar	10 <sup>th</sup> 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	50 <sup>th</sup> percentile of historical load profile	Represented by a probabilistic distribution considering the weather data in the preceding 15 years
Unplanned Outage	99 <sup>th</sup> 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





**Date:** June 16, 2025 **To:** Board of Directors

**From:** Dan Woodfin, Vice President of System Operations

Subject: ERCOT Risk-Based Maximum Daily Resource Planned Outage

Capacity Methodology Revision

#### **Issue for the ERCOT Board of Directors**

**ERCOT Board of Directors Meeting Date:** June 23-24, 2025

Item No.: 4.2

#### Issue:

Whether the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) should approve the revision to Methodology for Calculating Maximum Daily Resource Planned Outage Capacity as recommended by ERCOT staff, copy of which is attached hereto as **Attachment A**.

#### Background/History:

In PURA Chapter 35.0021 with the following language in paragraph (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." ERCOT uses the methodology for calculating maximum daily resource planned outage capacity to review, coordinate, and approve or deny requests of Resource planned outages.

Resource mix and projected load growth have increased the challenges of the existing methodology that will reduce the calculated maximum daily resource planned outage capacity significantly to support the needed outage capacity. It is also difficult to quantify the risk if the calculated outage capacity is adjusted to support the outage capacity.

Pursuant to the needs outlined above, and in consideration of stakeholder comments received in response to ERCOT's methodology revision proposals publicly discussed with ERCOT stakeholders since November 2024, ERCOT had issued a market notice to request comments on the proposed methodology revision and received no comments. ERCOT staff prepared a draft revision to Methodology for Calculating Maximum Daily Resource Planned Outage Capacity, a copy of which is attached hereto as **Attachment A**.

#### **Key Factors Influencing Issue:**

 ERCOT staff has prepared a draft Methodology for Calculating Maximum Daily Resource Planned Outage Capacity, attached hereto as Attachment A, which is proposes the Board approve.



• ERCOT will review the proposed methodology at least annually and work with stakeholders to make adjustments if necessary to maintain grid reliability while accommodating the need from Resources to schedule their Planned Outages.

#### **Conclusion/Recommendation:**

ERCOT staff recommends that the Board approve the Methodology for Calculating Maximum Daily Resource Planned Outage Capacity, as set forth in Attachment A.



# ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC. BOARD OF DIRECTORS RESOLUTION

WHEREAS, after due consideration of the alternatives, the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) deems it desirable and in the best interest of ERCOT to approve the revision to Methodology for Calculating Maximum Daily Resource Planned Outage Capacity, as set forth in *Attachment A*;

THEREFORE, BE IT RESOLVED, that the Methodology for Calculating Maximum Daily Resource Planned Outage Capacity is hereby approved as set forth in Attachment A.

#### **CORPORATE SECRETARY'S CERTIFICATE**

I, Brandon Gleason, Assistant Corporate Secretary of ERCOT, do hereby certify that, a its June 23-24, 2025, meeting, the Board passed a motion approving the above Resolution by
IN WITNESS WHEREOF, I have hereunto set my hand this day of 2025.
Brandon Gleason Assistant Corporate Secretary

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### Methodology for Calculating Maximum Daily Resource Planned Outage Capacity

Version <u>12</u>.0

#### **Document Revisions**

Version	Description	Author(s)	Effective Date
1.0	ERCOT Board approved Methodology for Calculating Maximum	ERCOT	7/29/2022
	Daily Resource Planned Outage Capacity		
2.0	Apply risk-based approach for calculating Maximum Daily	ERCOT	Xx/xx/2025
	Resource Planned Outage Capacity for days more than seven		
	days ahead of the Operating Day		



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#### 1 PURPOSE

Paragraph (1) of Protocol Section 3.1.6.13, Maximum Daily Resource Planned Outage Capacity, requires ERCOT to calculate the maximum capacity of Resource Planned Outages that should be allowed on each day of the next 60 months. ERCOT must calculate the Maximum Daily Resource Planned Outage Capacity for days more than seven days ahead of the Operating Day and for days that are seven days or less prior to the Operating Day. Pursuant to paragraph (3) of Section 3.16.13, which requires ERCOT to post the methodology used to calculate the Maximum Daily Resource Planned Outage Capacity on the ERCOT website, this document describes the details of methodology used in the calculation of these Maximum Daily Resource Planned Outage Capacity values. As further described herein, ERCOT establishes distinct Maximum Daily Resource Planned Outage Capacity values for Thermal Resources, Energy Storage Resources, and for Intermittent Renewable Resources (IRRs). As required by paragraph (6) of Protocol Section 3.1.6, Outages of Resources Other than Reliability Resources, this methodology does not apply to outages of nuclear Generation Resources. This methodology also does not apply to certain outages of Generation Resources that are part of an industrial generation facility ("IGF") if the owner of the facility has notified ERCOT of that status, as required by paragraph (7) of Protocol Section 3.1.6, and provided the information required by that paragraph in the Resource's Outage plan.

For each calendar year, ERCOT will review the current methodology and the calculated Maximum Daily Resource Planned Outage Capacity and report its findings to Technical Advisory Committee (TAC). The findings will include but not be limited to, the following:

- The aggregated hours of Resource Outages, including Planned Outages, Maintenance Outages, and Forced Outages in the preceding calendar year.
- Comparison of the calculated Maximum Daily Resource Planned Outage Capacity and the aggregated hours of thermal Resource Planned Outages in the preceding calendar year.

# 2 MAXIMUM DAILY RESOURCE PLANNED OUTAGE CAPACITY FOR DAYS MORE THAN SEVEN DAYS AHEAD OF THE OPERATING DAY

The Maximum Daily Resource Planned Outage Capacity for days more than seven days ahead of the Operating Day is calculated using seasonal assumptions, planned Resources that have met the eriteria in Planning Guide Section 6.9, Addition of Proposed Generation to the Planning Models, and the long term load forecast. Significant anticipated load growth, limited long term resource commitment, and the changing resource mix increase uncertainty of resource adequacy when evaluating outage requests over a time horizon of 60 months. While it is imperative to support Resource Planned Outages, the impact of the Outage to grid reliability should be assessed to inform ERCOT system operators and Market Participants. ERCOT uses a risk-based approach to determine the Maximum Daily Resource Planned Outage Capacity and its associated risk. The Maximum Daily Resource Planned Outage Capacity is calculated in 1-day time resolution.

### 2.1 Maximum Daily Resource Planned Outage Capacity for Thermal Generation Resources

Maximum Daily Resource Planned Outage Capacity for thermal Generation Resources = installed determined considering the following items

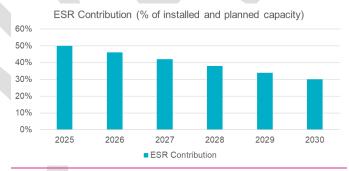
Installed thermal Generation Resource seasonal capacity + peak average capacity of hydroelectric Generation Resources + Switchable Generation Resource (SWGR) capacity available to ERCOT + available mothballed capacity + capacity from Private Use Network ("PUN") + Direct Current (DC) Tie capacity + installed IRR capacity - targeted reserve capacity + forecasted Demand reduction provided by price responsive Demand - unplanned Outage capacity for thermal Generation Resources - long term Load forecast + capacity of planned thermal Generation Resources + capacity of planned IRRs

#### where:

- (+) installed thermal Generation Resource seasonal capacity is, consistent with the calculation used in Protocol Section 3.2.6.2.24, Total Capacity Estimate, for the applicable seasons, and excludes excluding IRRs, Generation Resources in industrial generation facilities, ESRs, and DGR/DESRs
- (+) peak Peak average capacity contribution of hydroelectric Generation Resources is, consistent with the calculation used in Protocol Section 3.2.6.4
- Switchable capacity available to ERCOT, consistent with the calculation used in Protocol Section 3.2.6.4
- <u>Available mothballed capacity</u>, consistent with the calculation used in Protocol Section 3.2.6.2.2 for the applicable seasons4
- (+) SWGR capacity available to ERCOT is Capacity from Private Use Networks, consistent with the calculation used in Protocol Section 3.2.6.2.2 for the applicable seasons 4
- (+) available mothballed Non-Synchronous tie capacity is, consistent with the calculation used in Protocol Section 3.2.6.2.2 for the applicable seasons 4
- (+) capacity from PUNs is consistent with the calculation used in Protocol Section 3.2.6.2.2 for the applicable seasons
- (+) DC Tie capacity is consistent with the calculation used in Protocol Section 3.2.6.2.2 for the application seasons
- (-) targeted Targeted reserve level—is, consistent with the Outage Adjustment Evaluation (OAE) in the Advance Action Notice (AAN) process described in Protocol Section 3.1.6.9, Withdrawal of Approval or Acceptance and Rescheduling of Approved or Accepted Planned Outages of Resource Facilities
- (+) installed IRRInstalled and planned Wind Generation Resource (WGR) capacity is determined contribution, represented by a probabilistic distribution based on the 10<sup>th</sup> percentile of hourly historical wind and solar output for actual performance in the peak load hours of the same season for the previous preceding three years
- (+)Installed and planned Photo Voltaic Generation Resource (PVGR) capacity contribution, represented by a probabilistic distribution based on the actual performance in the preceding three years
- <u>Capacity</u> of planned thermal Generation Resources is determined based on the thermal Generation Resources that meet the requirements of Planning Guide, consistent with the

<u>calculation used in Protocol</u> Section <u>3.2.</u>6.9, the associated maximum sustainable capacity and the planned in-service date for each Resource identified in the unit registration <u>process4</u>

- (+) capacity of planned IRRs is determined based on the installed capacity of those IRRs that meet Planning Guide Section 6.9, the planned in service date for each IRR identified in the unit registration process, and the IRR's expected power production for the relevant season. The planned IRR capacity is calculated using the 10<sup>th</sup> percentile of the historical output per unit of installed IRR capacity. For example, if the total installed IRR capacity for a past season is 10,000 MW and the 10<sup>th</sup> percentile of the historical IRR output for the previous three years is 2,000MW, then the calculated planned IRR capacity for 1,000 MW of planned IRRs is (1,000) \* (2,000/10,000) = 200 MW.
- (+) the forecasted Forecasted Demand reduction provided by price-responsive Demand is, consistent with the Outage Adjustment Evaluation (OAE) in the Advance Action Notice (AAN) process described in Protocol Section 3.1.6.9
- (<u>) unplanned Unplanned Outage capacity for thermal Generation Resources is calculated, represented by a probabilistic distribution</u> based on the 99<sup>th</sup> percentile of unplanned Outages for the peak load hours of the same season actual performance in the preceding 3three years
- (-) long term—Load forecast is determined for the study years for the next 60 months, represented by a probabilistic distribution considering based on the 50<sup>th</sup> percentile of latest long-term load forecast report and the weather data in the preceding 15 years.
- <u>Installed and planned Energy Storage Resource (ESR) capacity contribution, determined as the percentage of total installed and planned ESR capacity listed in the historical load profile, smoothed using a rolling 7 day average chart below.</u>



Historical Resource Planned Outages are also considered when determining the Maximum Daily Resource Planned Outage Capacity for thermal Generation Resources.

- The calculation of summer ERCOT will use the Maximum Daily Resource Planned Outage Capacity values determined for thermal Generation Resources described in equation 2.1 should not exceed 105% of the historical maximum Resource Planned Outage Capacity of thermal Generation Resources from the previous three summer seasons, first future year for all subsequent years in the future 60 months and will assess the calculation of the winter associated risk.
- The average Maximum Daily Resource Planned Outage Capacity values for thermal Generation Resources should not exceed 105% of should be equal to or greater than 2500 MW for the historical maximum Resource Planned Outage Capacity of thermal Generation Resources from the previous three winter seasons summer months and 5000 MW for the

winter months. Summer months are June, July, and August; winter months are December, January, and February.

### 2.2 Maximum Daily Resource Planned Outage Capacity for Intermittent Renewable Resources (IRR)

Maximum Daily Resource Planned Outage Capacity for IRRs is calculated based on 105as 110% of the historical maximum Resource Planned Outages for IRRs from the previous three years.

[Insert Section 2.3 below upon system implementation of the Real-Time Co-Optimization (RTC) project.]

## 2.3 Maximum Daily Resource Planned Outage Capacity for Energy Storage Resources (ESRs)

Maximum Daily Resource Planned Outage Capacity for ESRs is calculated based on 110% of the historical maximum Resource Planned Outages for ESRs from the previous three years.

#### 2.32.4 Resource Planned Outage Plan Review for Other Resources

#### 2.3.12.4.1 Nuclear Generation Resources

In accordance with paragraph (6) of Protocol Section 3.1.6, ERCOT will approve Planned Outages for nuclear Generation Resources without regard to Outage capacity available within the Maximum Daily Resource Planned Outage Capacity.

#### 2.3.22.4.2 Industrial generation facilities

In accordance with paragraph (7) of Protocol Section 3.1.6, ERCOT will approve an Outage plan for a Generation Resource that is part of an IGF, even if the Outage would cause the Outage capacity to exceed the Maximum Daily Resource Planned Outage Capacity, if the plan states that the Generation Resource is part of an IGF, as described in Utilities Code § 39.151(*l*), and that the Outage is necessitated by the operational needs of an industrial Load normally served by the Generation Resource. However, ERCOT will not approve the Outage plan if ERCOT determines the Outage will impair its ability to ensure transmission security.

#### 2.3.3 Energy Storage Resources (ESR)

Currently, the capacity of Energy Storage Resources (ESRs) is assumed to be zero, consistent with Protocol Section 3.2.6.2.2, because nearly all ESRs are using their capacity to provide Ancillary Services rather than making that capacity available to meet system peak loads. Therefore, ERCOT does not intend to apply the Maximum Daily Resource Planned Outage

Capacity in reviewing Planned Outage plans for ESRs. However, ESR Planned Outage plans are subject to transmission security assessment.

### 2.3.42.4.3 Distributed Generation Resources (DGR), and Distributed Energy Storage Resources (DESR)

The capacity contribution of DGRs and DESRs to meet system peak load is assumed to be zero. Therefore, ERCOT does not intend to apply the Maximum Daily Resource Planned Outage Capacity in reviewing DGR and DESR Planned Outage plans. However, Planned Outage plans for DGRs and DESRs are subject to transmission security assessment.

### 3 MAXIMUM DAILY RESOURCE PLANNED OUTAGE CAPACITY FOR SEVEN DAYS OR LESS PRIOR TO OPERATING DAY

The Maximum Daily Resource Planned Outage Capacity is calculated to be consistent with the inputs used for an Outage Adjustment Evaluation (OAE) as described in Protocol Section 3.1.6.9.

## 3.1 Maximum Daily Resource Planned Outage Capacity for Thermal Generation Resources

Maximum Daily Resource Planned Outage Capacity for thermal Generation Resources = seasonal maximum capacity of Generation Resources for non-IRR and non-PUN + wind forecast + solar forecast + capacity from private use network + DC Tie capacity – unplanned outaged capacity of thermal Generation Resources – Load forecast – targeted reserve levels + the forecasted Demand reduction provided by price-responsive Demand + SODG and SOTG forecasts

#### where:

- (+) the seasonal maximum capacity of Generation Resource is computed by adding the seasonal net maximum capacity of the Generation Resource, as reported in its RARF, except for IRRs, private use network Generation Resources, ESRs, and DGRs/DESRs.
- (+) the selected Wind-powered Generation Resource Production Potential (WGRPP)
- (+) the selected PhotoVoltaic Generation Resource Production Potential (PVGRPP)
- (+) capacity from Generation Resources in the PUNs is consistent with calculation used in Protocol Section 3.2.6.2.24 for the applicable seasons
- (-) approved or accepted unplanned outage capacity as reported in the Outage Scheduler excluding IRRs, private use network Generation Resources, ESRs, and DGRs/DESRs
- (+) DC Tie capacity is consistent with the calculation used in Protocol Section 3.2.6.2.24 for the applicable seasons
- (-) the selected Load forecast
- (-) targeted reserve levels
- (+) forecasted Demand reduction provided by price-responsive Demand
- (+) SODG and SOTG forecast when available
- (+) 50% of available ESR capacity that is computed by adding the seasonal net maximum capacity of the ESRs

[Replace Section 3.2 above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project]

## 3.2 Maximum Daily Resource Planned Outage Capacity for Thermal Generation Resources

Maximum Daily Resource Planned Outage Capacity for thermal Generation Resources = seasonal maximum capacity of Generation Resources for non-IRR and non-PUN + wind forecast + solar forecast + capacity from private use network + DC Tie capacity – unplanned outaged capacity of thermal Generation Resources – Load forecast – targeted reserve levels + the forecasted Demand reduction provided by price-responsive Demand + SODG and SOTG forecasts + capacity from ESR

#### where:

- (+) the seasonal maximum capacity of Generation Resource is computed by adding the seasonal net maximum capacity of the Generation Resource, as reported in its RARF, except for IRRs, private use network Generation Resources, ESRs, and DGRs/DESRs.
- (+) the selected Wind-powered Generation Resource Production Potential (WGRPP)
- (+) the selected PhotoVoltaic Generation Resource Production Potential (PVGRPP)
- (+) capacity from Generation Resources in the PUNs is consistent with calculation used in Protocol Section 3.2.6.4 for the applicable seasons
- (-) approved or accepted unplanned outage capacity as reported in the Outage Scheduler excluding IRRs, private use network Generation Resources, ESRs, and DGRs/DESRs
- (+) DC Tie capacity is consistent with the calculation used in Protocol Section 3.2.6.4. for the applicable seasons
- (-) the selected Load forecast
- (-) targeted reserve levels
- (+) forecasted Demand reduction provided by price-responsive Demand
- (+) SODG and SOTG forecast when available
- (+) 50% of available ESR capacity that is computed by adding the seasonal net maximum capacity of the ESRs

# 3.23.3 Maximum Daily Resource Planned Outage Capacity for Intermittent Renewable Resources (#RRIRRs)

The Maximum Daily Resource Planned Outage Capacity for IRRs is determined based on 105as 110% of the historical maximum Resource Planned Outages for IRRs from the previous three years.

[Insert Section 3.4 below upon system implementation of the Real-Time Co-Optimization (RTC) project]

### 3.4 Maximum Daily Resource Planned Outage Capacity for Energy Storage Resources (ESRs)

Maximum Daily Resource Planned Outage Capacity for ESRs is calculated based on 110% of the historical maximum Resource Planned Outages for ESRs from the previous three years.

#### 3.33.5 Resource Planned Outage Request Review for Other Resources

#### 3.3.13.5.1 Nuclear Generation Resource

In accordance with paragraph (6) of Protocol Section 3.1.6, ERCOT will approve Planned Outages for nuclear Generation Resources without regard to Outage capacity available within the Maximum Daily Resource Planned Outage Capacity.

#### 3.3.23.5.2 Industrial generation facilities

In accordance with paragraph (7) of Protocol Section 3.1.6, ERCOT will approve an Outage plan for a Generation Resource that is part of an IGF, even if the Outage would cause the Outage capacity to exceed the Maximum Daily Resource Planned Outage Capacity, if the plan states that the Generation Resource is part of an IGF, as described in Utilities Code § 39.151(*l*), and that the Outage is necessitated by the operational needs of an industrial Load normally served by the Generation Resource. However, ERCOT will not approve the Outage plan if ERCOT determines the Outage will impair its ability to ensure transmission security.

#### 3.3.3 Energy Storage Resources (ESR)

Currently, the capacity of Energy Storage Resources (ESRs) is assumed to be zero, consistent with Protocol Section 3.2.6.2.2, because nearly all ESRs are using their capacity to provide Ancillary Services rather than making that capacity available to meet system peak loads. Therefore, ERCOT does not intend to apply the Maximum Daily Resource Planned Outage Capacity in reviewing Planned Outage plans for ESRs. However, ESR Planned Outage plans are subject to transmission security assessment.

### 3.3.43.5.3 Distributed Generation Resources (DGR), and Distributed Energy Storage Resources (DESR)

The capacity contribution of DGRs and DESRs to meet system peak load is assumed to be zero. Therefore, ERCOT does not intend to apply the Maximum Daily Resource Planned Outage Capacity in reviewing DGR and DESR Planned Outage plans. However, Planned Outage plans for DGRs and DESRs are subject to transmission security assessment.