Item 6.1: 2023 Summer Weather and Operations

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Board of Directors Meeting

ERCOT Public
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Overview

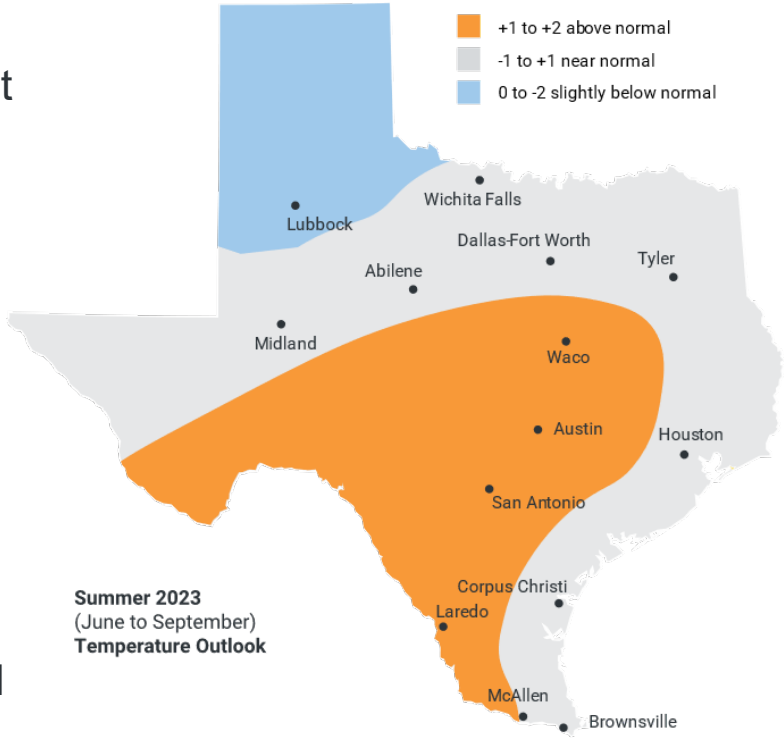
- **Purpose**
  - Provide a Summer 2023 Weather, Resource Adequacy, and Transmission outlook
  - Provide an overview of Summer operational changes and preparations
- **Voting Items / Requests**

  No action is requested of the Board; for discussion only

- **Key Takeaways**
  - Summer weather should be, on average, near normal this summer
  - ERCOT should have sufficient resources to serve demand under normal summer conditions
    - Tighter conditions could occur around sunset than at normal 5PM peak demand time due to loss of solar generation while demand is still high and wind is low
    - Tighter conditions are possible with some combinations of low wind/solar and high thermal outages at times of high demand

2023 Summer Weather Outlook

- The summer temperature outlook map shows about half the state with above normal temperatures (in orange) and the rest near normal to slightly below normal
- The temperature map is likely the warmest case scenario. May rains and the transition from La Niña to El Niño have lessened the chance for temperatures to be above normal
- The developing El Niño will likely lead to a lower-than-normal number of tropical storms and hurricanes in the Atlantic Basin, although a tropical storm or hurricane impacting Texas cannot be ruled out
- As of late-spring, the drought was impacting most of the western half of the state. Some of these same areas could still be impacted by drought this summer. Overall, the drought is unlikely to be as extreme as last summer



Key Takeaway: Summer 2023 temperatures in Texas, on average, are forecasted to be near normal and not as extreme as 2022.

Summer 2023: Resource Adequacy Outlook

- Base peak demand forecast of 83,412 MW
  - Includes 1,105 MW of large flexible loads that may reduce their consumption based on price
- Planning reserve margin for summer 2023 is 23% – comparable to summer 2022
- Assessment of resource adequacy for high demand days is dependent on output of wind and solar resources, as well as unplanned outages of thermal generation
- Supplementary scenarios constructed for hour-ending 9 PM show the impact of low solar production due to sunset, even with typical lower load and higher wind at that hour, could result in tighter conditions compared to the typical 5 PM summer peak load hour

Key Takeaway: Wind production continues to be important for maintaining sufficient reserve capacity during the afternoon and evening hours; increased solar resources pushing net-load peak into the early evening hours.

Seasonal Assessment of Resource Adequacy Outlook

Summer 2023	Forecasted Season Peak Load	Low Wind and Solar	High Unplanned Outages	High Peak Load
Total Resources (as of May 3)	96,988 MW [1]			
Peak Load	83,412 [2]			86,801 [3]
Unavailable Capacity [4]	5,034	5,034	8,423	5,034
Wind and Solar Reduction		10,906		
Capacity Available for Operating Reserves	8,542	2,212	5,153	5,153

[1] *Includes 10,427 MW of wind and 12,636 MW of solar*
[2] *Based on average weather from 2007-2021*
[3] *Based on 2011 weather conditions at the time of the summer season peak*
[4] *Assumptions for scenarios of Unavailable Capacity (outages) are detailed in SARA Report*

SARA Report also contains more extreme scenarios

Key Takeaway: ERCOT has sufficient capacity reserves for typical system conditions and most risk scenarios.

Seasonal Assessment of Resource Adequacy, Supplementary Scenarios for Hour-ending 9 PM

Summer 2023	Forecasted Season Peak Load	Low Wind	High Peak Load	High Peak Load / Low Wind
Total Resources, 9 PM (as of May 3)	90,971 MW [1]			
Load for hour 9 PM	78,267 [2]		81,656 [3]	
Unavailable Capacity [4]	5,034	5,034	5,034	5,034
Wind Reduction		12,279		12,279
Capacity Available for Operating Reserves	7,670	68	4,281	-3,321

[1] *Includes 16,996 MW of wind and 50 MW of solar*
[2] *Based on average weather from 2007-2021*
[3] *Based on 2011 weather conditions at the time of the summer season peak for HE 9 PM*
[4] *Assumptions for scenarios of Unavailable Capacity (outages) are detailed in SARA Report*

Key Takeaway: Due to negligible solar production, 9 PM now has more reserve shortage risk than 5 PM, the expected summer peak load hour.

Summer 2023 Transmission Outlook

- No wide-area reliability concerns seen in studies, barring significant outages
- Mitigation for units involved in Odessa events is complete except for one unit which is still in-process
- May experience congestion in some areas:
  - Export Constraints from Panhandle, West Texas and areas of the Rio Grande Valley during high wind conditions

Key Takeaway: Widespread transmission reliability issues are unlikely for Summer 2023.

Operational Changes and Other Preparations

- ERCOT Contingency Reserve Service (ECRS)
  - Procurements began on June 10th
  - Provides additional capacity that can ramp in 10 minutes to respond to short term net load ramps
- Validation of Physical Responsive Capability and dispatch capability through timely Resource telemetry and Current Operating Plan changes (NPRR 1085)
  - Help improve quality of Physical Responsive Capability (PRC) when units cannot follow dispatch or provide reserves
  - Implemented with ECRS
- Summer Transmission Outage Restrictions
  - In place as of May 16, 2023 through September 15, 2023
- Continued Conservative Operations

Key Takeaway: The implementation of ECRS and NPRR 1085 should aid ERCOT's continued reliability-focused operating posture this summer

Questions?