

Item 7.3: Commercial Markets Update

Gordon Drake
Director, Market Design and Analysis

Reliability and Markets Committee Meeting

ERCOT Public June 17, 2024

Overview

Purpose

 Update the Committee on notable market outcomes, progress in the Aggregate Distributed Energy Resource (ADER) Pilot, and on-going market development activities

Voting Items / Requests

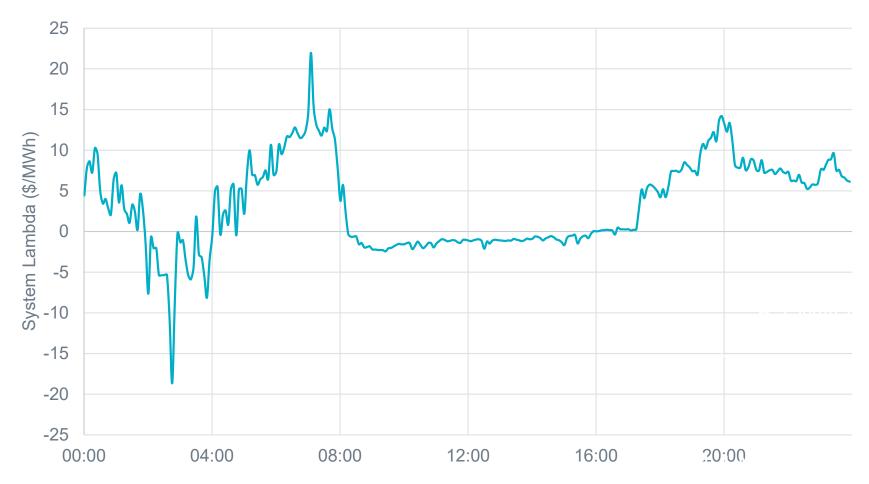
 No action is requested of the Reliability and Markets (R&M) Committee or Board; for discussion only

Key Takeaways

- Day-time prices <= \$0/MWh are becoming increasingly common, especially during shoulder months
- Higher outage levels contributed to prices at the system-wide cap during
 May
- Two ADER resources were successfully qualified to provide ERCOT Contingency Reserve Service (ECRS) and began participating in the ECRS market in May 2024
- Dispatchable Reliability Reserve Service (DRRS) NPRR will be a key topic of stakeholder discussion this summer



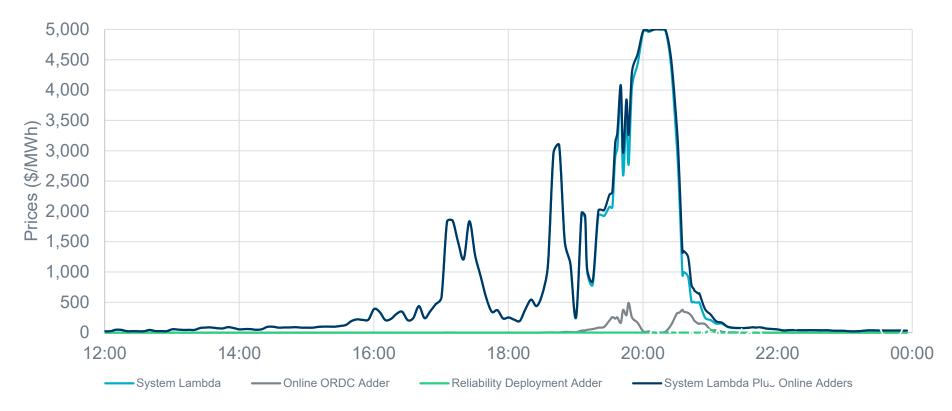
Sustained Negative Prices Seen During Renewable Penetration Record: March 29, 2024



- Zero and even negative prices are increasingly seen coinciding with high solar output during the day, not just overnight coinciding with high wind output
- On March 29, more than 40% of the SCED intervals had System Lambda below \$0/MWh



Higher Outage Levels Contributed to Scarcity Conditions: May 8, 2024

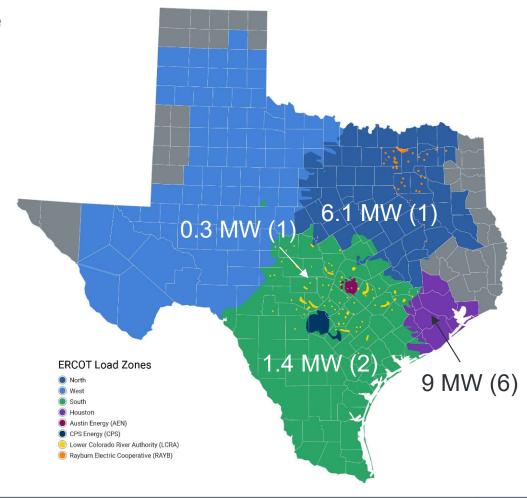


- Unseasonably hot temperatures and high levels of May maintenance outages combined to produce relative scarcity conditions
- Prices were elevated over the course of 4 hours from late afternoon to early evening, coinciding with the evening down-ramp of solar
- System-wide energy prices reached system-wide cap of \$5,000/MWh for several SCED intervals



Aggregate Distribution Energy Resource (ADER) pilot participation is expanding

- There are <u>currently 2 ADERs</u> participating in the wholesale electric market:
 - 13.1 MW for energy
 - 6 MW for Non-Spinning Reserve Service (Non-Spin)
 - 6 MW for ERCOT Contingency Rese (ECRS)
- Energy and Non-Spin participation began in Aug. '23, <u>ECRS participation</u> <u>began in May '24</u>.
- 8 additional ADERs have ERCOTaccepted Details of the Aggregation forms in place:
 - ERCOT-wide energy: 3.7 MW
 - ERCOT-wide Non-Spin: <u>1.1 MW</u>





A New Ancillary Service is Under Development

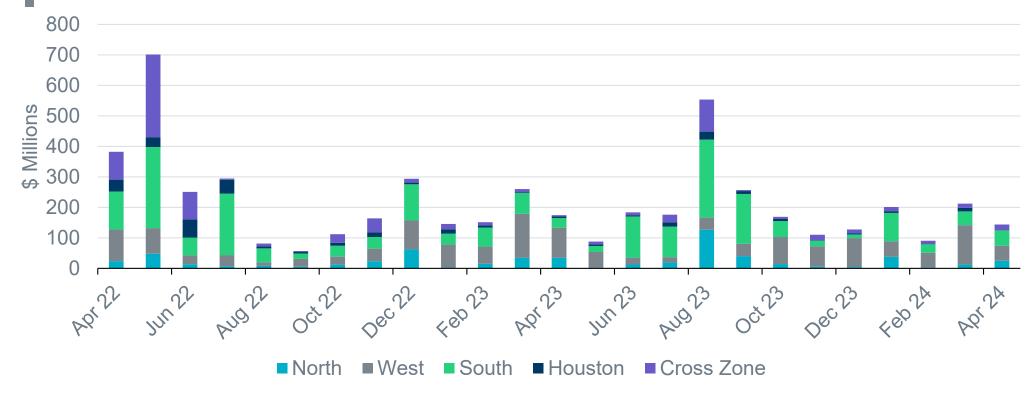
- ERCOT staff filed a Nodal Protocol Revision Request (NPRR), along with an associated Nodal Operating Guide Revision Request (NOGRR) and impact analysis, to implement the Dispatchable Reliability Reserve Service (DRRS) as a new, stand-alone Ancillary Service
 - DRRS is required by PURA § 39.159(d) as adopted by H.B. 1500 (88th Leg.)
- A workshop was hosted on June 3rd to discuss the latest proposed design and collect stakeholder feedback
 - A major topic for the workshop was the evolution of the proposed design, particularly revisions to Resource eligibility to provide DRRS
- We expect active stakeholder discussions on the NPRR over the summer and so are raising the subject for Board awareness
 - No Board action is expected for some time



Appendix



Real-Time Congestion Rent by Zone



- Congestion Rent is determined using the shadow prices and MW flows for individual constraints in SCED as well as the length in time of SCED intervals.
- Total Real-Time congestion rent decreased in April compared to March, with the highest congestion rent in the South and West Zones.
 - Congestion rent in the South Zone was primarily driven by the North Edinburg to Lobo Generic Transmission Constraint.
 - Congestion rent in the West Zone was primarily driven by the loss of the 345 kV contingency from Morgan Creek to Champion Creek and Bitter Creek to Morgan Creek overloading the 345 kV transmission line from Morgan Creek to Tonkawa Switch.
- The "Cross Zone" category consists of cases in which the substations on either end of the constraint are in different zones.



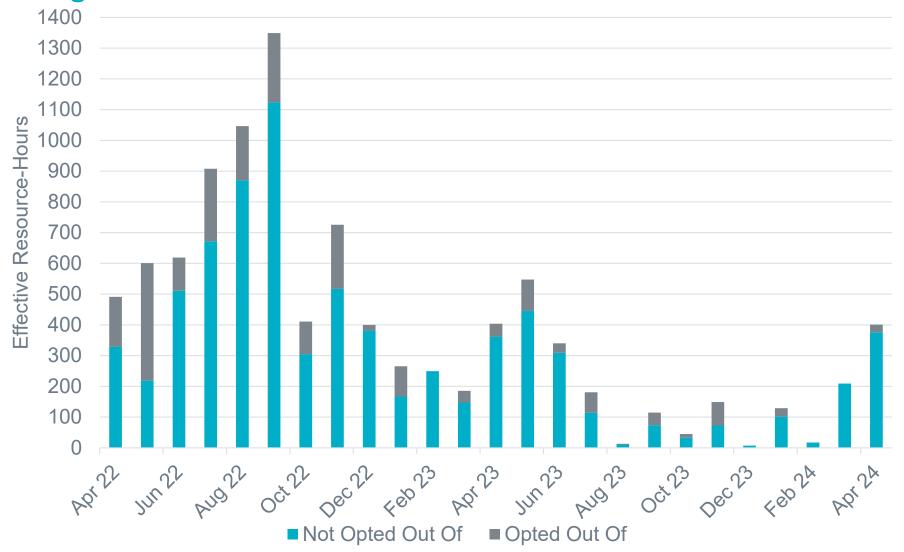
Twenty-Nine Resources were Committed in April for Capacity and Congestion

Resource#	Effective Resource-hours	Non-Opt Out (Effective Hours)	Opt Out (Effective Hours)	
1	10.9	10.9	0.0	
2	14.7	14.7	0.0	
3	6.0	0.0	6.0	
4	5.0	5.0	0.0	
5	45.9	45.9	0.0	
6	46.7	46.7	0.0	
7	9.0	0.0	9.0	
8	4.9	4.9	0.0	
9	2.0	2.0	0.0	
10	4.0	4.0	0.0	
11	6.0	0.0	6.0	
12	2.0	2.0	0.0	
13	5.0	5.0	0.0	
14	68.7	68.7	0.0	
15	3.0	3.0	0.0	
16	2.0	2.0	0.0	
17	12.0	12.0	0.0	
18	14.9	14.9	0.0	
19	3.0	3.0 0.0		
20	1.0	1.0	0.0	

Resource #	Effective Resource-hours	Non-Opt Out (Effective Hours)	Opt Out (Effective Hours)
21	1.0	1.0	0.0
22	1.0	1.0	0.0
23	1.0	1.0	0.0
24	1.0	1.0	0.0
25	4.0	4.0	0.0
26	9.0	5.0	4.0
27	7.0	7.0	0.0
28	109.3	109.3	0.0
29	1.0	1.0	0.0
Total	401.0	376.0	25.0



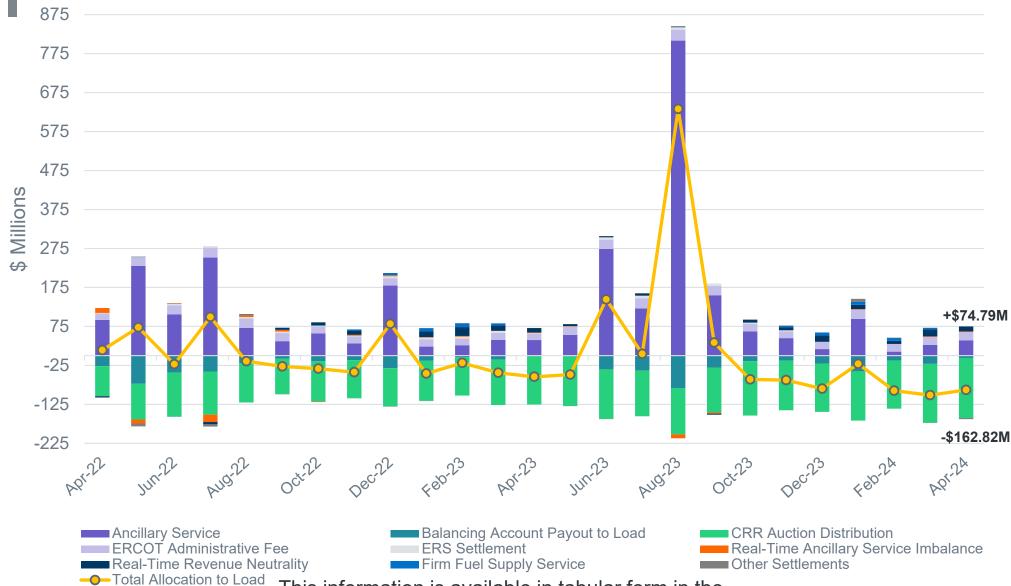
Twenty-Nine Resources were Committed in April for Capacity and Congestion



"Effective Resource-Hours" excludes any period during a Reliability Unit Commitment hour when the RUC-committed Resource was starting up, shutting down, off-line, or otherwise not available for dispatch by SCED.



Net Allocation to Load in April 2024 was (\$88.04) Million

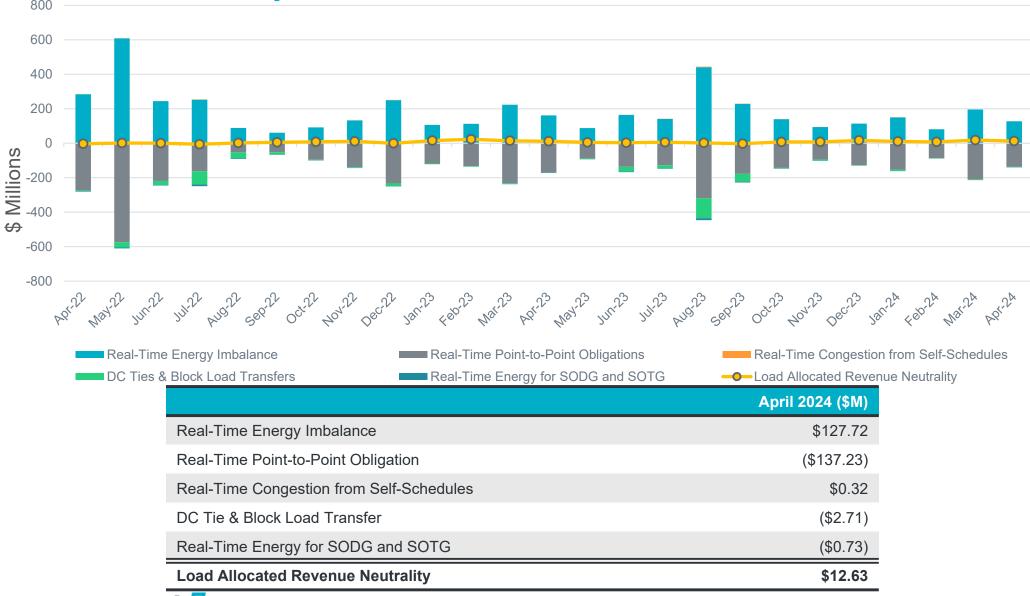


This information is available in tabular form in the Settlement Stability Report presented quarterly to the

Wholesale Market Subcommittee

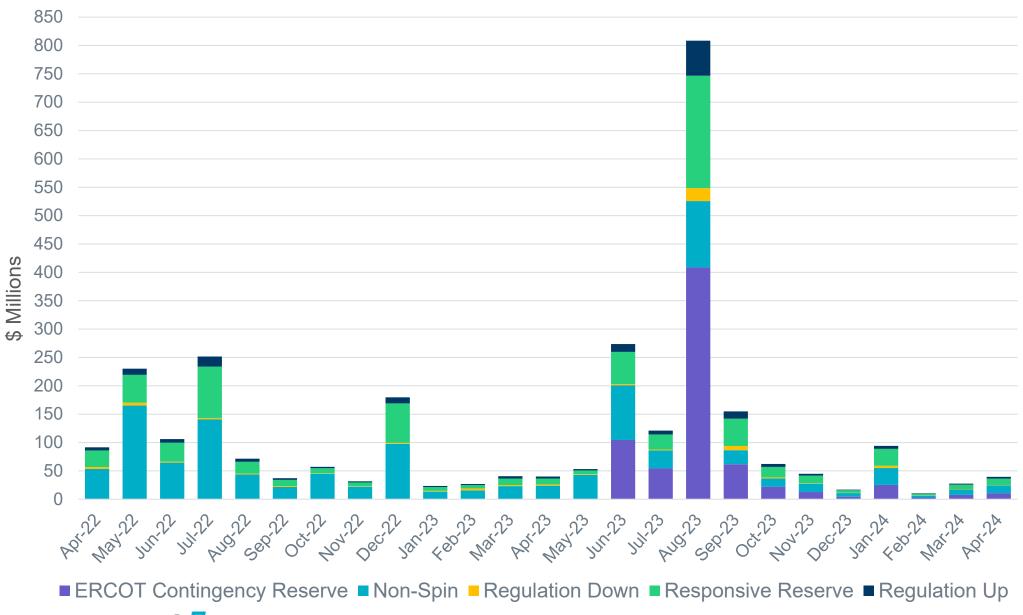


Real-Time Revenue Neutrality Allocated to Load was \$12.63M for April 2024

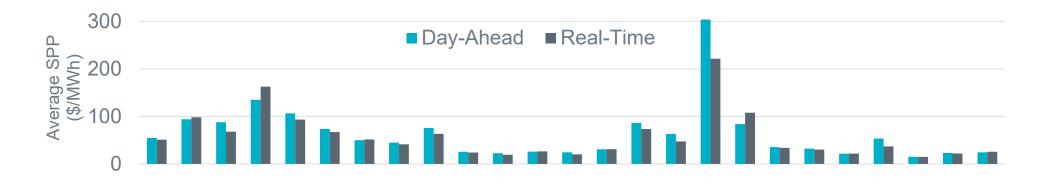


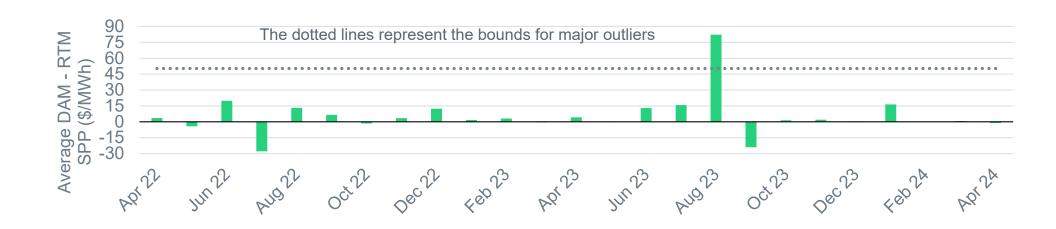


Ancillary Services for April 2024 totaled \$39.44M



Day-Ahead and Real-Time Market Price Differences

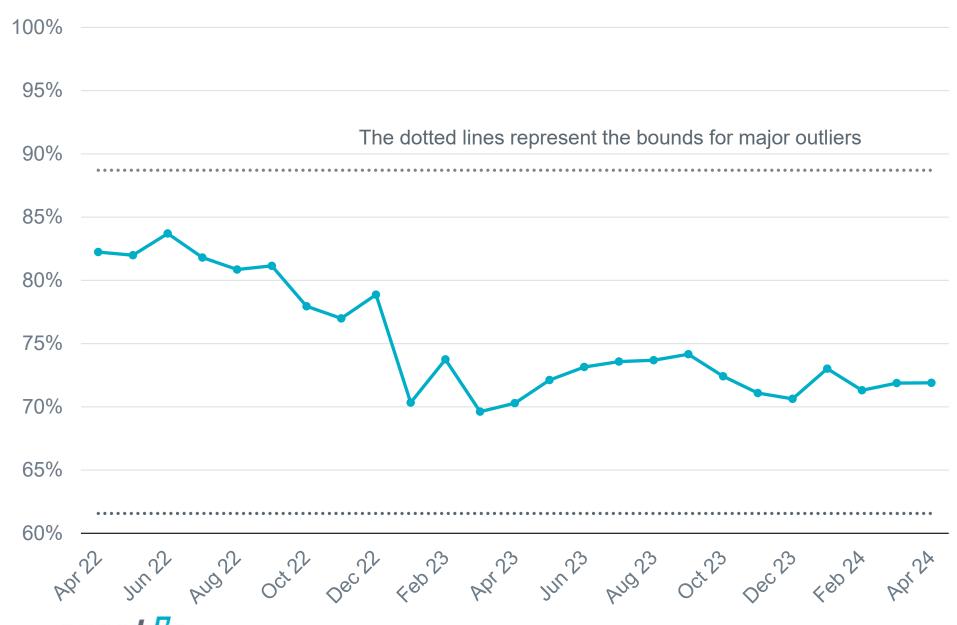






*Averages are weighted by Real-Time Market Load

Percentage of Real-Time Load Transacted in the Day-Ahead Market



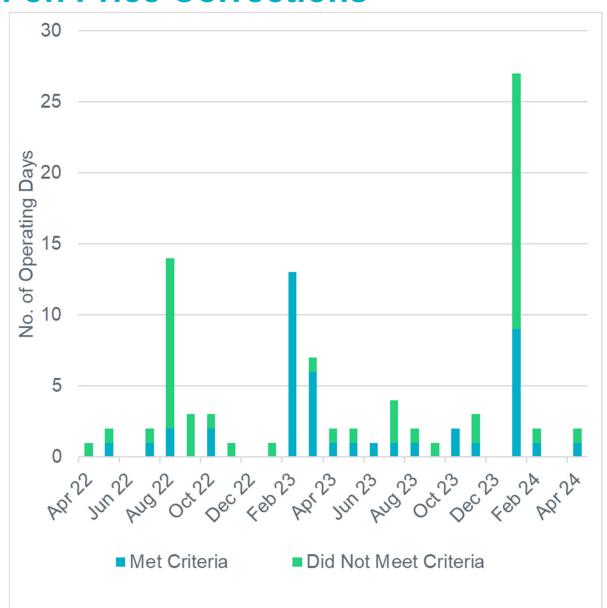
Congestion Revenue Rights (CRR) Value and Cost Differences



Price Issues and the Impact of Nodal Protocol Revision Request (NPRR) 1024 on Price Corrections

This graph looks at the recent history of price issues in the RTM or DAM and breaks the impacted Operating Days into three categories:

- Days that met the criteria for "significance" under NPRR1024 and were corrected and;
- Days that were not corrected because they did not meet the criteria for "significance" under NPRR1024.





Details for April Price Corrections Review

Operating Days Meeting Significance Criteria

On April 2, 2024, SCED encountered an issue and failed to run when it was unable to process invalid telemetry from a resource. SCED failed to run for intervals 11:10 – 11:30 AM. In accordance with ERCOT Protocol Section 6.5.9.2 paragraph (2), in the event of a SCED failure, the Locational Marginal Prices (LMPs) from the last valid SCED run (11:05) will be held for all impacted SCED intervals including a 15-minute period after the first valid SCED run after the issue is resolved (11:32). The estimated total dollar impact was approximately \$16,326.

Operating Days Not Meeting Significance Criteria

 On April 29, 2024, the Emergency Basepoint Flag was activated during planned maintenance of the Market Management System. The estimated total dollar impact was approximately \$231.



Details for May Price Corrections Review

On May 9, 2024, ERCOT became aware of an issue with Real-Time Market (RTM) prices in which the Real-Time On-Line Reserve Price Adder (RTORPA) was not being included. This was observed following a planned operating system upgrade project deployed on April 29, 2024. After the deployment, RTORPAs were not being successfully populated in downstream data tables. On May 13, 2024, ERCOT implemented a fix to ensure RTORPAs were being applied correctly.

Operating Days Meeting Significance Criteria

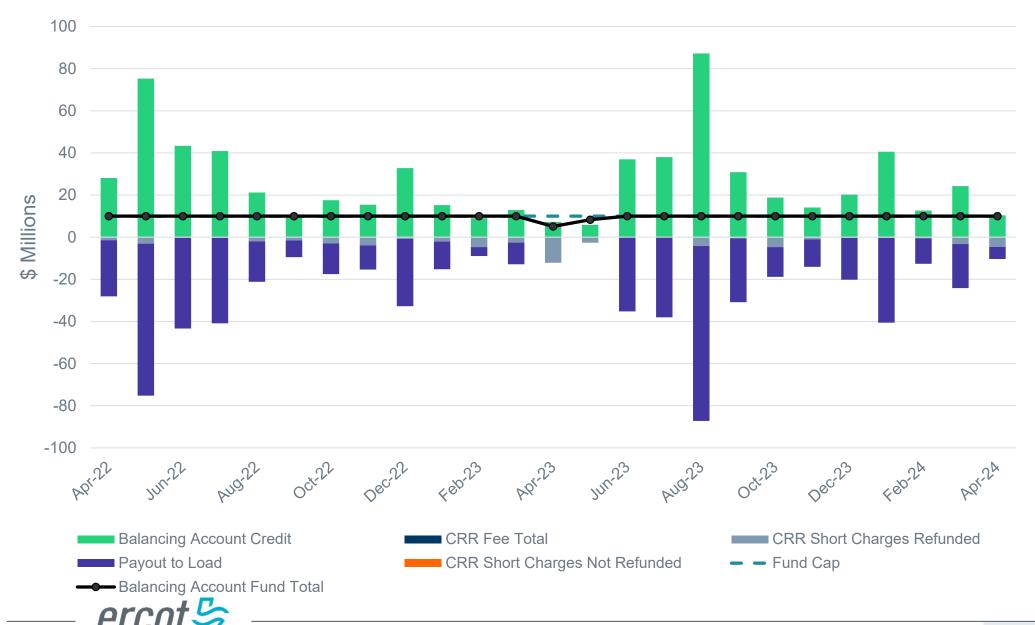
• Of the affected Operating Days (ODs), May 10, May 11, and May 13 met criteria for significance before their prices became final and were able to be corrected.

Operating Days Not Meeting Significance Criteria

 ODs April 29, May 2, and May 7 were past the 2-day deadline for correction when their prices became final. Further analysis was performed, and it was determined than none of the ODs meet the criteria for significance needed to bring prices to the ERCOT Board of Directors for review. Of the Counter-Parties with an impact of 2% or greater, the largest absolute dollar impact was approximately \$0.20.

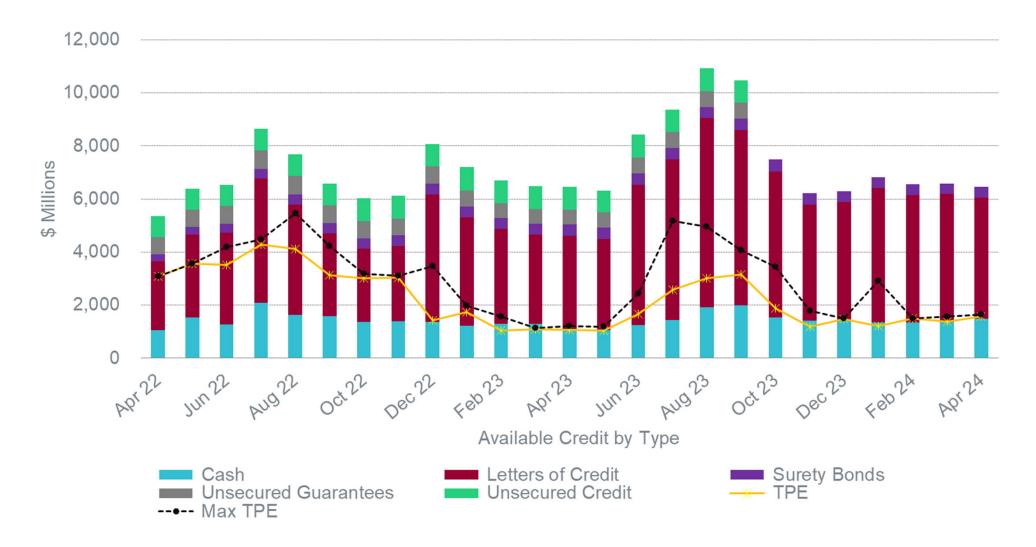


The CRR Balancing Account was fully-funded and excess amounts were allocated to Load



ERCOT Public

Available Credit by Type Compared to Total Potential Exposure (TPE)





Retail Transaction Volumes – Summary – April 2024

	Year-To-Date		Transactions Received	
Transaction Type	April 2024	April 2023	April 2024	April 2023
Switches	451,201	382,377	145,509	78,600
Acquisitions	0	0	0	0
Move - Ins	1,099,514	1,011,466	251,888	245,045
Move - Outs	453,553	436,554	120,430	107,304
Continuous Service Agreements (CSA)	121,373	142,616	30,727	35,897
Mass Transitions	0	0	0	0
Total	2,125,641	1,973,013	548,554	466,846



Agenda Item 7.3 - Attachment A



Date: April 16, 2024 **To:** Board of Directors

From: Bob Flexon, Reliability and Markets (R&M) Committee Chair

Subject: Market Price Correction – Incorrect Line, Series Device, and Transformer

Ratings Impacting the Real-Time and Day-Ahead Markets - REVISED

Issue for the ERCOT Board of Directors

ERCOT Board of Directors Meeting Date: April 23, 2024

Item No.: 10.2

Issue:

Pursuant to paragraph (6) of Protocol Section 4.5.3, Communicating DAM Results, and paragraph (7) of Protocol Section 6.3, Adjustment Period and Real-Time Operations Timeline, whether the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) should approve price corrections for Day-Ahead Market Clearing Prices for Capacity (DAMCPCs), Day-Ahead Settlement Point Prices (DASPPs), Real-Time Locational Marginal Prices (RTLMPs), Real-Time Settlement Point Prices (RTSPPs), Real-Time Price for Energy Metered for Resources (RTRMPRs), and Real-Time Price for Energy Metered for Settlement Only Generators (RTESOGPRs) for certain Operating Days (ODs) in January 2024 that were affected by the use of incorrect ratings for certain transmission elements.

Background/History:

ERCOT staff has identified the need to correct prices in the Real-Time Market (RTM) and Day-Ahead Market (DAM) for certain ODs in January 2024. The impacted prices include:

- DAMCPCs;
- DASPPs;
- RTLMPs;
- RTSPPs;
- RTRMPRs; and
- RTESOGPRs.

The ERCOT Protocols require ERCOT to correct prices when invalid prices are identified in an otherwise valid market solution. If ERCOT determines that prices are erroneous, ERCOT must correct the prices before they are final. For the DAM, prices are final at 1000 on the second Business Day following the OD. For the RTM, prices are final at 1600 on the second Business Day following the OD. However, if ERCOT determines that prices are erroneous and need correction after they are final, then ERCOT shall seek Board review of such prices provided that, within 30 days of the OD, ERCOT notifies Market Participants of the need for correction and that ERCOT intends to seek Board approval of the correction.



In considering a correction of prices, the Board may rely on the following reasons to find that prices should be corrected:

- <u>Data Input Error</u>: Missing, incomplete, stale, or incorrect versions of one or more
 data elements input to the market applications may result in an invalid market
 solution and/or prices.
- <u>Data Output Error</u> (RTM only): These include incorrect or incomplete data transfer, price recalculation error in post-processing, and Base Points inconsistent with prices due to the Emergency Base Point flag remaining activated even when the Security-Constrained Economic Dispatch (SCED) solution is valid.
- <u>Hardware/Software Error</u>: These include unpredicted hardware or software failures, planned market system or database outages, planned application or database upgrades, software implementation errors, and failure of the market run to complete.
- Inconsistency with the Protocols or Public Utility Commission of Texas (PUCT)
 <u>Substantive Rules</u>: Pricing errors may occur when specific circumstances result
 in prices that are in conflict with such Protocol language or the PUCT
 Substantive Rules.

See ERCOT Protocol Sections 4.5.3(4) - (6) and 6.3(4) - (7) for the DAM and RTM, respectively.

On January 29, 2024, ERCOT became aware of an issue concerning the ratings of certain transmission lines, series devices, and transformers. As part of the weekly model loads, the Energy Management System (EMS) retained outdated Normal/Emergency/15-Minute status ratings from the 2023 NOV_ML1 CIM model through the 2024 JAN_ML3 CIM model due to a defect in the EMS. These ratings are used by the RTM and DAM.

On January 30, 2024 around 23:00, ERCOT implemented a fix to ensure that correct static ratings for the transmission lines, series devices, and transformers are used in EMS from the CIM models.

On February 5, 2024, ERCOT notified the market of the issue and ERCOT's intent, upon completion of an impact analysis, to seek Board approval for price correction as specified by ERCOT Protocol Sections 4.5.3(6) and 6.3(7)(b) for the DAM and RTM, respectively. See Market Notice M-A020524-01.

On March 12, 2024, ERCOT notified the market of the price impact results, which identified eight ODs for the DAM and three ODs for the RTM that met significance



criteria for seeking Board approval for price correction. See Market Notice M-A020524-

Accordingly, ERCOT requests that the Board:

- Review DAMCPCs and DASPPs for the following ODs:
 - January 15, 2024
 - January 17, 2024
 - January 19, 2024
 - January 10, 2024
 - January 15, 2024
 - January 17, 2024
 - January 18, 2024
 - January 19, 2024
 - January 20, 2024
 - January 23, 2024

 - January 25, 2024
- (b) Review RTLMPs, RTSPPs, RTRMPRs, and RTESOGPRs for the following ODs:
 - January 10, 2024
 - January 15, 2024
 - January 17, 2024
 - January 18, 2024
 - · January 19, 2024
 - January 20, 2024
 - January 23, 2024
 - January 25, 2024
- Make a determination as to whether such prices were significantly (c) affected by the error; and
- Direct ERCOT to correct the impacted DAMCPCs, DASPPs, RTLMPs, (d) RTSPPs, RTRMPRs, and RTESOGPRs for the specified ODs in January 2024.

Attached hereto are documents containing corrected DAMCPCs, DASPPs, RTLMPs, RTSPPs, RTRMPRs, and RTESOGPRs for the ODs listed above, as follows:

- Attachment A Corrected DAMCPCs
- Attachment B Corrected DASPPs
- Attachment C Corrected RTLMPs
- Attachment D Corrected RTSPPs
- Attachment E Corrected RTRMPRs

Formatted: Bulleted + Level: 1 + Aligned at: 1" + Indent at: 1.25"



Attachment F - Corrected RTESOGPRs

Relevant Protocol Sections:

4.5.3 Communicating DAM Results

- (4) ERCOT shall correct prices for an Operating Day when a market solution is determined to be invalid or invalid prices are identified in an otherwise valid market solution, accurate prices can be determined, and the impact of the price correction is significant. The following are some reasons that may cause an invalid market solution or invalid prices in a valid market solution.
 - (a) Data Input error: Missing, incomplete, or incorrect versions of one or more data elements input to the DAM application may result in an invalid market solution and/or prices.
 - (b) Software error: Pricing errors may occur due to software implementation errors in DAM pre-processing, DAM clearing process, and/or DAM post processing.
 - (c) Inconsistency with these Protocols or the Public Utility Commission of Texas (PUCT) Substantive Rules: Pricing errors may occur when specific circumstances result in prices that are in conflict with such Protocol language or the PUCT Substantive Rules.
- (6) All DAM LMPs, MCPCs, and Settlement Point Prices are final at 1000 of the second Business Day after the Operating Day.
 - (a) However, after DAM LMPs, MCPCs, and Settlement Point Prices are final, if ERCOT determines that prices qualify for a correction pursuant to paragraph (4) above and that ERCOT will seek ERCOT Board review of such prices, it shall notify Market Participants and describe the need for such correction as soon as practicable but no later than 30 days after the Operating Day. Failure to notify Market Participants within this timeline precludes the ERCOT Board from reviewing such prices. However, nothing in this section shall be understood to limit or otherwise inhibit any of the following:
 - ERCOT's duty to inform the PUCT of potential or actual violations of the ERCOT Protocols or PUCT Rules and its right to request that the PUCT authorize correction of any prices that may have been affected by such potential or actual violations;
 - (ii) The PUCT's authority to order price corrections when permitted to do so under other law; or



- (iii) ERCOT's authority to grant relief to a Market Participant pursuant to the timelines specified in Section 20, Alternative Dispute Resolution Procedure.
- (b) Before seeking ERCOT Board review of prices, ERCOT will determine if the impact of the price correction is significant, as that term is used in paragraph (4) above, by calculating the potential changes to the DAM Settlement Statement(s) of any Counter-Party on the given Operating Day. ERCOT shall seek ERCOT Board review of prices if the change in DAM Settlement Statement(s) would result in the absolute value impact to any single Counter-Party, based on the sum of all original DAM Settlement Statement amounts of Market Participants assigned to the Counter-Party, to be greater than:
 - (i) 2% and also greater than \$20,000; or
 - (ii) 20% and also greater than \$2,000.
- (c) The ERCOT Board may review and change DAM LMPs, MCPCs, or Settlement Point Prices if ERCOT gave timely notice to Market Participants and the ERCOT Board finds that such prices should be corrected for an Operating Day.
- (d) In review of DAM LMPs, MCPCs, or Settlement Point Prices, the ERCOT Board may rely on the same reasons identified in paragraph (4) above to find that the prices should be corrected for an Operating Day.

6.3 Adjustment Period and Real-Time Operations Timeline

- (4) ERCOT shall correct prices for an Operating Day when accurate prices can be determined, the impact of the price correction is determined to be significant, and one of the following conditions has been met: a market solution is determined to be invalid, invalid prices are identified in an otherwise valid market solution, the Base Points received by Market Participants are inconsistent with the Base Points of a valid market solution, or the Security-Constrained Economic Dispatch (SCED) process experiences a failure as described in Section 6.5.9.2, Failure of the SCED Process. The following are some reasons that may cause these conditions:
 - (a) Data Input error: Missing, incomplete, stale, or incorrect versions of one or more data elements input to the market applications may result in an invalid market solution and/or prices.
 - (b) Data Output error: These include incorrect or incomplete data transfer, price recalculation error in post-processing, and Base Points inconsistent



- with prices due to the Emergency Base Point flag remaining activated even when the SCED solution is valid.
- (c) Hardware/Software error: These include unpredicted hardware or software failures, planned market system or database outages, planned application or database upgrades, software implementation errors, and failure of the market run to complete.
- (d) Inconsistency with the Protocols or Public Utility Commission of Texas (PUCT) Substantive Rules: Pricing errors may occur when specific circumstances result in prices that are in conflict with such Protocol language or the PUCT Substantive Rules.
- (7) All Real-Time LMPs, Real-Time Settlement Point Prices, Real-Time prices for energy metered, Real-Time On-Line Reliability Deployment Price Adders, Real-Time On-Line Reliability Deployment Prices, Real-Time Reserve Prices for On-Line Reserves, Real-Time Reserve Prices for Off-Line Reserves, Real-Time On-Line Reserve Price Adders, Real-Time Off-Line Reserve Price Adders and SASM MCPCs are final at 1600 of the second Business Day after the Operating Day.
 - (a) However, after Real-Time LMPs, Real Time Settlement Point Prices, Real-Time prices for energy metered, Real-Time On-Line Reliability Deployment Price Adders, Real-Time On-Line Reliability Deployment Prices, Real-Time Reserve Prices for On-Line Reserves, Real-Time Reserve Prices for Off-Line Reserves, Real-Time On-Line Reserve Price Adders, Real-Time Off-Line Reserve Price Adders and SASM MCPCs are final, if ERCOT determines that prices qualify for a price correction pursuant to paragraph (4) above and that ERCOT will seek ERCOT Board review of such prices, it shall notify Market Participants and describe the need for such correction as soon as practicable but no later than 30 days after the Operating Day. Failure to notify Market Participants within this timeline precludes the ERCOT Board from reviewing such prices. However, nothing in this section shall be understood to limit or otherwise inhibit any of the following:
 - ERCOT's duty to inform the PUCT of potential or actual violations of the ERCOT Protocols or PUCT Rules and its right to request that the PUCT authorize correction of any prices that may have been affected by such potential or actual violations;
 - (ii) The PUCT's authority to order price corrections when permitted to do so under other law; or



- (iii) ERCOT's authority to grant relief to a Market Participant pursuant to the timelines specified in Section 20, Alternative Dispute Resolution Procedure.
- (b) Before seeking ERCOT Board review of prices, ERCOT will determine if the impact of the price correction is significant, as that term is used in paragraph (4) above, by calculating the potential changes to the Real-Time Market (RTM) Settlement Statement(s) of any Counter-Party on a given Operating Day. ERCOT shall seek ERCOT Board review of prices if the change in RTM Settlement Statement(s) would result in the absolute value impact to any single Counter-Party, based on the sum of all original RTM Settlement Statement amounts of Market Participants assigned to the Counter-Party, to be greater than:
 - (i) 2% and also greater than \$20,000; or
 - (ii) 20% and also greater than \$2,000.
- (c) The ERCOT Board may review and change Real-Time LMPs, Real-Time Settlement Point Prices, Real-Time prices for energy metered, Real-Time On-Line Reliability Deployment Price Adders, Real-Time On-Line Reliability Deployment Prices, Real-Time Reserve Prices for On-Line Reserves, Real-Time Reserve Prices for Off-Line Reserves, Real-Time On-Line Reserve Price Adders, Real-Time Off-Line Reserve Price Adders and SASM MCPCs if ERCOT gave timely notice to Market Participants and the ERCOT Board finds that such prices should be corrected for an Operating Day.
- (d) In review of Real-Time LMPs, Real Time Settlement Point Prices, Real-Time prices for energy metered, Real-Time On-Line Reliability Deployment Price Adders, Real-Time On-Line Reliability Deployment Prices, Real-Time Reserve Prices for On-Line Reserves, Real-Time Reserve Prices for Off-Line Reserves, Real-Time On-Line Reserve Price Adders, Real-Time Off-Line Reserve Price Adders and SASM MCPCs, the ERCOT Board may rely on the same reasons identified in paragraph (4) above to find that the prices should be corrected for an Operating Day.

Key Factors Influencing Issue:

- Due to the use of incorrect transmission element ratings, DAMCPCs, DASPPs, RTLMPs, RTSPPs, RTRMPRs, and RTESOGPRs for the identified ODs in January 2024 were incorrect and cannot be corrected by ERCOT without authorization from the Board.
- Analysis of the impacts of the pricing error for the impacted ODs has shown that the largest dollar impact to any individual Counter-Party for a single OD is

Agenda Item 7.3 - Attachment A



approximately \$1.05 Million. For Counter-Parties meeting the dollar impact criteria, the largest percentage impact to a Counter-Party for a single OD is 128.96%.

• Notably, Nodal Protocol Revision Request (NPRR) 1024, Determination of Significance with Respect to Price Corrections, was approved by the Board in February 2021 and became effective on April 1, 2021. NPRR1024 requires ERCOT to seek Board review of prices if the change in Settlement Statement(s) would result in the absolute value impact to any single Counter-Party, based on the sum of all original Settlement Statement amounts of Market Participants assigned to the Counter-Party, to be greater than 2% and also greater than \$20,000, or 20% and also greater than \$2,000.

Conclusion/Recommendation:

ERCOT recommends, and the R&M is expected to recommend, that the Board make a determination that DAMCPCs, DASPPs, RTLMPs, RTSPPs, RTRMPRs, and RTESOGPRs for the identified intervals in January 2024 were significantly affected by incorrect transmission element ratings, and direct ERCOT to correct the impacted prices for OD at issue.



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

WHEREAS, paragraph (6) of Protocol Section 4.5.3, Communicating DAM Results, authorizes the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT) to approve a price correction for certain prices if ERCOT has determined that such prices have been significantly affected by an error;

WHEREAS, in accordance with paragraph (6) of Protocol Section 4.5.3, ERCOT staff gave timely notice to Market Participants that Day-Ahead Market Clearing Prices for Capacity (DAMCPCs) and Day-Ahead Settlement Point Prices (DASPPs) for certain Operating Days (ODs) in January, 2024 were incorrect; that a price correction for each of those ODs met the criteria for "significance" in Protocol Section 4.5.3(6)(b); and ERCOT staff would be seeking Board review of such prices;

WHEREAS, paragraph (7) of Protocol Section 6.3, Adjustment Period and Real-Time Operations Timeline, authorizes the Board of ERCOT to approve a price correction for certain prices if ERCOT has determined that such prices have been significantly affected by an error;

WHEREAS, in accordance with paragraph (7) of Protocol Section 6.3, ERCOT staff gave timely notice to Market Participants that Real-Time Market Locational Marginal Prices (RTLMPs), Real-Time Market Settlement Point Prices (RTSPPs), Real-Time Price for Energy Metered for Resources (RTRMPRs), and Real-Time Price for Energy Metered for Settlement Only Generators (RTESOGPRs) for certain ODs in January 2024 were incorrect; that a price correction for each of those ODs met the criteria for "significance" in Protocol Section 6.3(7)(b); and ERCOT staff would be seeking Board review of such prices; and

WHEREAS, after due consideration of the alternatives, the Board deems it desirable and in the best interest of ERCOT to correct DAMCPCs, DASPPs, RTLMPs, RTSPPs, RTRMPRs, and RTESOGPRs for certain ODs in January 2024 that were significantly affected by incorrect transmission element ratings;

THEREFORE, BE IT RESOLVED, that the Board hereby (1) determines that DAMCPCs, DASPPs, RTLMPs, RTSPPs, RTRMPRs, and RTESOGPRs for certain ODs in January, 2024, were significantly affected by incorrect transmission element ratings; and (2) directs ERCOT staff to implement the appropriate price corrections pursuant to Protocol Sections 4.5.3 and 6.3.



CORPORATE SECRETARY'S CERTIFICATE

, Jonathan M. Levine, Assistant Corporate Secretary of ERCOT, do hereby certify that, at its April 23, 2024 meeting, the Board passed a motion approving the above Resolution by
N WITNESS WHEREOF, I have hereunto set my hand this day of April, 2024.
Jonathan M. Levine Assistant Corporate Secretary