



**GENERAL SESSION MINUTES OF THE
RELIABILITY AND MARKETS COMMITTEE MEETING
OF ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.**

8000 Metropolis Drive (Building E), Suite 100, Boardroom B
Austin, Texas 78744
December 18-19, 2023

Pursuant to notice duly given, the meeting of the Reliability and Markets (R&M) Committee of the Board of Directors (Board) of Electric Reliability Council of Texas, Inc. (ERCOT), convened on the above-referenced dates.

Meeting Attendance:

Committee Members:

Director	Affiliation/Role (if any)	Voting Category
Aguilar, Carlos	N/A (<i>Not Present for Agenda Items 13 – 15</i>)	Voting
England, Julie	N/A	Voting
Flexon, Bob (Chair)	N/A (<i>Via Teleconference</i>)	Voting
Hjaltman, Courtney	Office of Public Utility Counsel (OPUC), Public Counsel	Voting

Other Board Members:

Director	Affiliation/Role (if any)	<u>Voting Category</u>
Capuano, Linda	N/A (<i>Not Present for Agenda Items 1 – 12</i>)	Voting
Flores, Bill	N/A (<i>Not Present for Agenda Items 1 – 12</i>)	Voting
Foster, Paul	N/A (<i>Not Present for Agenda Items 1 – 12</i>)	Voting
Heeg, Peggy	N/A (<i>Not Present for Agenda Items 1 – 12</i>)	Voting
Jackson, Kathleen	Public Utility Commission of Texas (PUCT, Commission), Interim Chair (<i>Not Present for Agenda Items 1 – 12</i>)	Non-Voting
Swainson, John	N/A (<i>Not Present for Agenda Items 1 – 12</i>)	Voting
Vegas, Pablo	ERCOT President and Chief Executive Officer (CEO) (<i>Not Present for Agenda Items 1 – 12</i>)	Non-Voting



Officers and Guests:

Officer/Guest	Role
Black, Robert	ERCOT Vice President of Public Affairs
Cobos, Lori	PUCT Commissioner (<i>Not Present for Agenda Items 1 – 12</i>)
Day, Betty	ERCOT Vice President of Security and Compliance and Chief Compliance Officer
Glotfelty, Jimmy	PUCT Commissioner (<i>Not Present for Agenda Items 1 – 12</i>)
Golen, Robert	ERCOT Manager of Regional Planning
Hobbs, Kristi	ERCOT Vice President of System Planning and Weatherization
Jolly, Emily	Lower Colorado River Authority, Technical Advisory Committee (TAC) Representative, Cooperative Segment
Lange, Clif	South Texas Electric Cooperative, Inc., TAC Chair
Levine, Jonathan	ERCOT Assistant General Counsel and Assistant Corporate Secretary
Ögelman, Kenan	ERCOT Vice President of Commercial Operations
Patton, David	Potomac Economics, ERCOT Independent Market Monitor (IMM), President
Parakkuth, Jayapal	ERCOT Vice President and Chief Information Officer
Rainwater, Kim	ERCOT Corporate Counsel
Rickerson, Woody	ERCOT Senior Vice President and Chief Operations Officer
Seely, Chad V.	ERCOT Senior Vice President, General Counsel, and Corporate Secretary
Spak, Mara	ERCOT Vice President of Human Resources
Tamby, Jeyant	ERCOT Senior Vice President, Chief Administrative Officer and Chief of Staff
Taylor, Sean	ERCOT Vice President and Chief Financial Officer
Woodfin, Dan	ERCOT Vice President of System Operations
Zerwas, Rebecca	ERCOT Director of State Policy and PUC Relations and Board Liaison

Call General Session to Order (Agenda Item 1)

Bob Flexon, R&M Committee Chair, joined the meeting by teleconference, determined that a quorum was present in person, and called the R&M Committee meeting to order at approximately 12:04 p.m. He reported that today's agenda noticed the meeting would recess following Agenda Item 12 and resume tomorrow beginning with Agenda Item 13, Independent Market Monitor (IMM) Report. Chair Flexon highlighted the Antitrust Admonition and addressed the following Agenda Items in the order below.

Notice of Public Comment, if Any (Agenda Item 2)

Chair Flexon announced that on the agenda for the meeting, which was posted publicly on December 11, 2023, ERCOT had provided instructions for members of the public who were interested in commenting in person, and to date, no individuals had expressed interest in commenting, which Jonathan Levine confirmed.



October 16, 2023 General Session Meeting Minutes (Agenda Item 3)

Chair Flexon entertained a motion to approve the October 16, 2023 General Session Meeting Minutes (Minutes).

Julie England moved to approve the Minutes as presented. Carlos Aguilar seconded the motion. The motion passed by unanimous voice vote with no abstentions.

Annual Committee Self-Evaluation Survey Results (Agenda Item 4)

Following the October meeting, Board members who served on the R&M Committee during 2023 were asked to complete a Committee Self-Evaluation Survey. Results were compiled and included in the meeting materials. Chair Flexon commented on the survey results and the expected benefits of moving technology duties from the Committee to the Technology and Security Committee.

Report on Annual Technical Advisory Committee (TAC) and Subcommittee Structural/Procedural Review (Agenda Item 5)

TAC Chair Clif Lange reported the results of TAC's 2023 annual review of the structure, process, and goals for TAC and its subcommittees. Mr. Lange reported the current structure of TAC and subcommittees was deemed necessary and effective and that TAC bodies were encouraged to review their scope and open action items. Committee members and Mr. Lange discussed ranking of TAC goals, as well as comments around the Revision Request process and possible improvements, particularly how to get more relevant information to the Committee and Board. Chair Flexon observed today is Mr. Lange's last meeting as TAC Chair and thanked Mr. Lange for his partnership, cooperative spirit, and contributions.

Recommendations regarding R&M Committee Charter Revision Requests for Board Approval; TAC Report regarding R&M Committee Charter Revision Requests Recommended for Board Approval; NPRR1172, Fuel Adder Definition, Mitigated Offer Caps, and RUC Clawback (Agenda Items 6 – 6.1.1)

Chair Flexon introduced NPRR1172, of which TAC recommended approval non-unanimously with five opposing votes. Chair Flexon invited Mr. Lange to present TAC's report. Mr. Lange reported that the five opposing votes and two abstentions at TAC were primarily based on concerns that increasing the Reliability Unit Commitment (RUC) clawback to 100% would not necessarily incentivize self-commitment and reduce the number of RUCs. Kenan Ögelman indicated ERCOT staff supports NPRR1172 and agrees with the IMM that a 100% RUC clawback would reduce the number of RUCs. Committee members and Mr. Ögelman discussed potential price impacts of reduced RUCs and the importance of future monitoring to confirm the change achieves the desired result.

Courtney Hjaltman moved to recommend that the Board recommend approval of NPRR1172 as recommended by TAC. Ms. England seconded the motion. The motion passed by unanimous voice vote with no abstentions.



Recommendations regarding Regional Planning Group (RPG) Tier 1 Transmission Projects; West Texas Synchronous Condenser RPG Project; TNMP – Silverleaf and Cowpen 345/138-kV Stations RPG Project (Agenda Items 7 – 7.2)

Kristi Hobbs presented the Recommendations regarding Regional Planning Group (RPG) Tier 1 Transmission Projects. The Committee considered two RPG projects under this Agenda Item, West Texas Synchronous Condenser RPG Project and TNMP – Silverleaf and Cowpen 345/138-kV Stations RPG Project, including ERCOT staff's recommendation that the Board designate the TNMP Project as critical to the reliability of the ERCOT System pursuant to PUCT Substantive Rule 25.101 [16 Tex. Admin. Code § 25.101]. Committee members, Ms. Hobbs, and Woody Rickerson discussed whether synchronous condensers would be needed for grid stability in regions other than West Texas. Committee members, Ms. Hobbs, and Robert Golen discussed anticipated Load growth and how far into the future the TNMP Project can be expected to serve existing plus additional Load.

Mr. Aguilar moved to recommend that the Board endorse the need for the Tier 1 West Texas Synchronous Condenser RPG Project, which ERCOT staff has independently reviewed and which TAC has voted unanimously to endorse, based on North American Electric Reliability Corporation (NERC) and ERCOT reliability planning criteria. Ms. England seconded the motion. The motion passed by unanimous voice vote with no abstentions.

Mr. Aguilar moved to recommend that the Board (1) endorse the need for the Tier 1 Silverleaf and Cowpen 345/138-kV Stations Regional Planning Group Project (Option 1), which ERCOT staff has independently reviewed and which TAC has voted unanimously to endorse, based on NERC and ERCOT reliability planning criteria; and (2) designate the project as critical to the reliability of the ERCOT System pursuant to PUCT Substantive Rule 25.101(b)(3)(D). Ms. Hjaltnan seconded the motion. The motion passed by unanimous voice vote with no abstentions.

Recommendation regarding Real-Time Market Price Correction – Security Constrained Economic Dispatch (SCED) Error (Agenda Item 8)

Mr. Ögelman presented ERCOT staff's recommendation for the Board to approve correction of Real-Time Market prices for Operating Day October 22, 2023, when certain intervals were significantly affected by SCED's failure to process Three-Part Offers and Current Operating Plans. Jayapal Parakkuth commented on how the error was identified and how it was communicated to Market Participants. Committee members and Mr. Ögelman discussed credit and collectability concerns, the sufficiency of communication with Market Participants during such pricing events to facilitate efficient submission of Day-Ahead offers, and the resettlement timeline following approval of the price correction.

Ms. England moved to recommend the Board approve the proposed correction of Real-Time Market prices for Operating Day October 22, 2023 as presented. Mr. Aguilar seconded the motion. The motion passed by unanimous voice vote with no abstentions.

Committee Briefs (Agenda Item 10)

Chair Flexon invited ERCOT staff to present the Committee Briefs.

System Planning and Weatherization Update (Agenda Item 10.1)

Ms. Hobbs presented the System Planning and Weatherization Update, including the weatherization and inspection program that recently certified the first five ERCOT Weatherization Inspectors; as of mid-December, just more than 7,700 MW of new dispatchable natural gas generation has entered the generation interconnection queue since April; and ERCOT is tracking Large Load interconnection requests. Commissioner Cobos, Committee members, and Ms. Hobbs discussed weatherization assumptions in the Monthly Outlook on Resource Adequacy (MORA) report. Ms. Hobbs' report included updates on the Reliability Standard, Value of Lost Load, and Cost of New Entry studies.

System Operations Update (Agenda Item 10.2)

Dan Woodfin presented the System Operations Update. He reported that ERCOT staff are working with stakeholders to refine Nodal Operating Guide Revision Request (NOGRR) 245, Inverter-Based Resource (IBR) Ride-Through Requirements, which is expected for Board consideration in February 2024. Committee members and Mr. Woodfin discussed the Maximum Daily Resource Planned Outage Capacity (MDRPOC) and the frequency of updates going forward.

Commercial Markets Update (Agenda Item 10.3)

Mr. Ögelman presented the Commercial Markets Update, including an update on Aggregate Distributed Energy Resource (ADER) Pilot Project. Mr. Ögelman reported ERCOT has accepted aggregation forms from nine ADERs to offer ERCOT-wide energy (9.4 MW) and ERCOT-wide Non-Spinning Reserve (Non-Spin) (3.1 MW), and that the ADER Task Force has begun discussing next steps, such as adding additional Ancillary Service products to the pilot project and improving validation and performance metrics. Committee members and Mr. Ögelman discussed thresholds for ADER participation and the number of total participants. Mr. Ögelman highlighted Real-Time congestion rent by zone. Committee members, Commissioner Cobos, Mr. Ögelman, and Mr. Rickerson discussed reserves and Ancillary Services prices in August and October 2023. Committee members and Mr. Ögelman discussed retail transaction volume for October 2023.

Real-Time Co-optimization Update (Agenda Item 10.3.1)

Mr. Ögelman presented the Real-Time Co-optimization (RTC) Update, highlighting NPRR1204, Considerations of State of Charge with Real-Time Co-Optimization Implementation, which is scheduled for Board consideration on December 19, 2023 and would incorporate RTC State of Charge requirements into the Protocols to support vendor development in early 2024.

Market Credit Update (Agenda Item 10.4)

Mr. Ögelman presented the Market Credit Update. Committee members and Mr. Ögelman discussed excess collateral. Mr. Ögelman highlighted NPRR1205, Revisions to Credit Qualification Requirements of Banks and Insurance Companies.

Revision Request Status Update (Agenda Item 10.5)

Mr. Levine presented the Revision Request Status Update.



Future Agenda Items (Agenda Item 11)

Mr. Ögelman presented the Future Agenda Items, including items anticipated for the Committee in 2024.

Other Business (Agenda Item 12)

No other business was discussed at this time.

Recess General Session

Chair Flexon recessed General Session at approximately 1:51 p.m. on Monday, December 18, 2023, and announced that General Session was scheduled to reconvene on Tuesday, December 19, 2023 at 8:30 a.m.

Reconvene General Session

Chair Flexon joined the meeting by teleconference, determined that a quorum was present in person, and reconvened General Session at approximately 8:30 a.m. on Tuesday, December 19, 2023. Chair Flexon again highlighted the Antitrust Admonition and confirmed no requests for public comment were received since the Committee recessed yesterday. Chair Flexon thanked Carrie Bivens for helping the ERCOT market during Ms. Bivens' tenure as Director of the ERCOT IMM.

Chair Flexon recognized Kathleen Jackson, Interim Chair of the PUCT. Interim Chair Jackson called the Open Meeting of the Commission to order to consider matters which had been duly posted with the Texas Secretary of State for December 19, 2023.

Chair Flexon addressed the following Agenda Items in the order below.

Independent Market Monitor (IMM) Report (Agenda Item 13)

David Patton, President of Potomac Economics, presented the IMM Report, which highlighted the IMM's recommendations regarding the 2024 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements. Dr. Patton recommended, in the long-term, that ERCOT calculate the quantity of needed reserves by using a probabilistic reliability model that models the level of exposure to all sources of uncertainty and determines the quantity of reserves that need to be purchased to protect against the uncertainty to a reasonable level. Dr. Patton recommended, in the short-term, that ERCOT shorten the net Load forecast error periods from six to two hours for Non-Spin and shorten the net Load forecast error period for ERCOT Contingency Reserve Service (ECRS) from 30 to 10 minutes, and change ERCOT's processes to deploy ECRS earlier, all with the effect of reducing Ancillary Services procurements without impacting reliability. Committee members and Dr. Patton discussed the impact of increasing Load over time on wholesale prices and how Load and reserves are considered when making determinations of pricing efficiency. Discussion also included impacts of Intermittent Renewable Resources (IRRs) in the ERCOT Region when comparing reserves to Independent System Operators (ISOs) in the Eastern Interconnect.



Recommendation regarding 2024 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements; ERCOT Recommendation regarding 2024 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements; TAC Endorsement of ERCOT Recommendation regarding 2024 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements (Agenda Items 14 – 14.2)

Chair Flexon introduced Agenda Item 14, Recommendation regarding 2024 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements. Mr. Woodfin presented the ERCOT recommendation. Emily Jolly presented the Technical Advisory Committee (TAC) endorsement of ERCOT's recommendation. Committee members discussed reliability criteria for the ERCOT Region used to formulate the IMM's market assessments, compared to the reliability criteria under development by the Commission and ERCOT, as well as how ERCOT implementation of RTC will help market performance, including ECRS. Commissioners and Mr. Woodfin also discussed use of ECRS. Commissioners and Mr. Seely discussed ERCOT staff's commitment to engage TAC around the Ancillary Service methodology no later than April 30, 2024, and discussed including the Commission and IMM in revaluation of the methodology. Chair Flexon and ERCOT Legal discussed the form of a motion on the 2024 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements. Chair Flexon entertained a motion and commented that the R&M Committee expects to hear more about the Ancillary Service methodology in early 2024 following ERCOT staff's engagement with TAC and the IMM.

Ms. England moved to recommend the Board approve the 2024 ERCOT Methodologies for Determining Minimum Ancillary Service Requirements, as recommended by ERCOT staff. Ms. Hjaltnan seconded the motion. The motion passed by unanimous voice vote with no abstentions.

Adjournment (Agenda Item 15)

Chair Flexon adjourned the meeting at approximately 10:01 a.m.

Committee materials and presentations from the meeting are available on ERCOT's website at <https://www.ercot.com/committees/board/reliabilitymarkets>.

A handwritten signature in blue ink, appearing to read "Jonathan M. Levine".

Jonathan M. Levine
Assistant Corporate Secretary