**APPROVED**

**Minutes of the Technical Advisory Committee (TAC) Meeting**

**ERCOT Austin – 8000 Metropolis Drive (Building E), Suite 100– Austin, Texas 78744**

**Tuesday, March 21, 2023 – 9:30 a.m.**

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| Attendance |  |  |
| *Members:* |  |  |
| Barnes, Bill | Reliant Energy Retail Services (Reliant) |  |
| Cochran, Seth | DC Energy |  |
| DeLeon, Amanda | Tenaska Power Services (Tenaska) | Alt. Rep. for Jeremy Carpenter Via Teleconference |
| Dreyfus, Mark | City of Eastland |  |
| Franklin, Russell | Garland Power and Light (GP&L) | Via Teleconference |
| Gaytan, Jose | Denton Municipal Electric (DME) | Via Teleconference |
| Goff, Eric | Residential Consumer |  |
| Hanson, Kevin | National Grid Renewables (NG Renewables) |  |
| Haley, Ian | Luminant Generation (Luminant) |  |
| Hendrix, Chris | Demand Control 2 | Via Teleconference |
| Jolly, Emily | Lower Colorado River Authority (LCRA) |  |
| Kee, David | CPS Energy |  |
| Kent, Garret | CMC Steel Texas (CMC Steel) |  |
| Lange, Clif | South Texas Electric Cooperative (STEC) |  |
| Martin, Collin | Oncor Electric Delivery (Oncor) |  |
| Mercado, David | CenterPoint Energy (CNP) |  |
| Nix, Keith | Texas-New Mexico Power (TNMP) | Via Teleconference |
| Pokharel, Nabaraj | Office of Public Utility Counsel (OPUC) |  |
| Powell, Christian | Pedernales Electric Cooperative (PEC) |  |
| Ross, Richard | AEP Service Corporation |  |
| Sams, Bryan | Calpine Corporation (Calpine) |  |
| Schmitt, Jennifer | Rhythm Ops | Via Teleconference |
| Smith, Bill | Air Liquide | Via Teleconference |
| Smith, Caitlin | Jupiter Power | Via Teleconference |
| Surendran, Resmi | Shell Energy North America (SENA) | Via Teleconference |
| Wise, Mike | Golden Spread Electric Cooperative (GSEC) |  |

The following proxies were assigned:

* Nick Fehrenbach to Mark Dreyfus
* Bob Helton to Caitlin Smith
* Resmi Surendran to Kevin Hanson
* Jay Harpole to Bill Barnes
* Chris Hendrix to Bill Barnes
* Alicia Loving to David Kee

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| *Guests:* | |  |  |
| Abbott, Kristin | | Austin Energy | Via Teleconference |
| Ainspan, Malcolm | | NRG | Via Teleconference |
| Allen, Thresa | | Avangrid Renewables | Via Teleconference |
| Ashley, Kristy | | CES | Via Teleconference |
| Barati, Camron | | Potomac Economics | Via Teleconference |
| Barr, Bill | | LCRA | Via Teleconference |
| Bell, Brad | | Solar Proponent | Via Teleconference |
| Benson, Mariah | | PUCT | Via Teleconference |
| Berry, Danny | | LCRA | Via Teleconference |
| Bertin, Suzanne | |  | Via Teleconference |
| Bivens, Carrie | | Potomac Economics |  |
| Blackburn, Don | | Hunt Energy Network | Via Teleconference |
| Blakey, Eric | | PEC |  |
| Block, Laurie | |  | Via Teleconference |
| Brunkenhoefer, Ken | | HGP Storage | Via Teleconference |
| Bunch, Kevin | | EDF Trading | Via Teleconference |
| Callender, Hudson | | CPS Energy | Via Teleconference |
| Campo, Curtis | | City of Garland | Via Teleconference |
| Cheng, Yong | | LCRA | Via Teleconference |
| Claiborn-Pinto, Shawnee | | PUCT | Via Teleconference |
| Clifford, Brigid | | PG Renewables | Via Teleconference |
| Coleman, Diana | | CPS Energy | Via Teleconference |
| Conant, Portia | | Yes Energy | Via Teleconference |
| Cortez, Sarai | | Trailstone Group | Via Teleconference |
| Cox, Jason | | EQ Energy Advisors | Via Teleconference |
| Cripe, Ramsey | | Schneider Engineering | Via Teleconference |
| Daigneault, Ralph | | Potomac Economics | Via Teleconference |
| DeLeon, Seth | | DME | Via Teleconference |
| Dharme, Neeraja | | EDF Energy | Via Teleconference |
| Dollar, Zachary | | PUCT | Via Teleconference |
| Gross, Blake | | AEPSC | Via Teleconference |
| Gupta, Udit | | Light Source | Via Teleconference |
| Hall, Matthew | | Invenergy | Via Teleconference |
| Henson, Martha | | Oncor | Via Teleconference |
| Hermes, Connie | | STEC | Via Teleconference |
| Hubbard, John | | TIEC |  |
| Kirby, Brandon | | GEUS | Via Teleconference |
| Koz, Brian | | Alpha Taraxia | Via Teleconference |
| Lacek, Mollie | | Talen Energy | Via Teleconference |
| Lee, Jim | | CNP |  |
| Levereth, Travis | | WETT |  |
| Lotter, Eric | | GridMonitor | Via Teleconference |
| Macaraeg. Tad | | Stem | Via Teleconference |
| Macias, Jesse | | AEP Texas | Via Teleconference |
| Martin, Loretto | | NRG | Via Teleconference |
| Mathews, Michael | | BTU | Via Teleconference |
| Mayers, Sharon | | Worley | Via Teleconference |
| McClellan, Suzi | | Good Company | Via Teleconference |
| McKeever, Debbie | | Oncor |  |
| McMurray, Creighton | | PUCT | Via Teleconference |
| Mechler, Robert | | LS Power | Via Teleconference |
| Noyes, Theresa | | LCRA |  |
| Ok, Brendan | | PUCT | Via Teleconference |
| Oliver, Jon | | PUCT | Via Teleconference |
| Orr, Rob | | Lone Star Transmission | Via Teleconference |
| Pyka, Greg | | Schneider Engineering | Via Teleconference |
| Ramaswamy, Ramya | | PUCT | Via Teleconference |
| Reed, Ronald | | CNP | Via Teleconference |
| Reedy, Steve | | CIM View Consulting | Via Teleconference |
| Reid, Walter | | APA | Via Teleconference |
| Ritch, John | | NextEra Energy | Via Teleconference |
| Sager, Brenden | | Austin Energy | Via Teleconference |
| San Miguel, Senaida | | Texas Sunset Advisory Commission | Via Teleconference |
| Scott, Kathy | | CNP |  |
| Sersen, Juliana | | Baker Botts | Via Teleconference |
| Shellman, Carolyn | |  | Via Teleconference |
| Showalter, Dana | | Plus Power | Via Teleconference |
| Siddiqi, Shams | | Crescent Power Consulting | Via Teleconference |
| Smith, Chase | | Southern Power | Via Teleconference |
| Snyder, Bill | | AEP | Via Teleconference |
| Stephenson, Zach | | Texas Electric Cooperatives |  |
| Swigonski, Frank | | PG Renewables | Via Teleconference |
| True, Roy | | ACES | Via Teleconference |
| Turner, Lucas | | STEC | Via Teleconference |
| Varble, Erika | | Gerdau | Via Teleconference |
| Varnell, John | | Tenaska | Via Teleconference |
| Walker, Floyd | | PUCT | Via Teleconference |
| Wall, Perrin | | CNP | Via Teleconference |
| Williams, Lori | | BTU | Via Teleconference |
| Wittmeyer, Bob | | Longhorn Power |  |
| Wood, Jamie | | LP&L | Via Teleconference |
| Wu, Tiffany | | PUCT | Via Teleconference |
| Xie, Fei | | Austin Energy | Via Teleconference |
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|  |  | |  |
| *ERCOT Staff:* |  | |  |
| Albracht, Brittney |  | |  |
| Anderson, Troy |  | |  |
| Billo, Jeff |  | |  |
| Boren, Ann |  | |  |
| Clifton, Suzy |  | |  |
| Du, Pengwei |  | | Via Teleconference |
| Dwyer, Davida |  | | Via Teleconference |
| Fernandes, Jenifer |  | | Via Teleconference |
| Garcia, Freddy |  | | Via Teleconference |
| Gnanam, Prabhu |  | | Via Teleconference |
| Gonzalez, Ino |  | | Via Teleconference |
| Green, Alex |  | | Via Teleconference |
| Holden, Curry |  | | Via Teleconference |
| Holt, Blake |  | | Via Teleconference |
| Kang, Sun Wook |  | | Via Teleconference |
| Kezell, David |  | |  |
| King, Ryan |  | |  |
| Lee, Alex |  | | Via Teleconference |
| Maggio, Dave |  | |  |
| Mago, Nitika |  | | Via Teleconference |
| Mantena, Dan |  | | Via Teleconference |
| Meier, Kennedy |  | | Via Teleconference |
| Mereness, Matt |  | |  |
| Ögelman, Kenan |  | |  |
| Parakkuth, Jayapal |  | | Via Teleconference |
| Phillips, Cory |  | |  |
| Rosel, Austin |  | | Via Teleconference |
| Shanks, Magie |  | | Via Teleconference |
| Shaw, Pamela |  | | Via Teleconference |
| Solis, Stephen |  | | Via Teleconference |
| Troublefield, Jordan |  | |  |
| Wasik-Gutierrez, Erin |  | |  |
| Zerwas, Rebecca |  | | Via Teleconference |

*Unless otherwise indicated, all Market Segments participated in the votes.*

Clif Lange called the March 21, 2023 meeting to order at 9:30 a.m.

Antitrust Admonition

Mr. Lange directed attention to the displayed Antitrust Admonition and noted that the Antitrust Guidelines are available for review on the ERCOT website.

Approval of TAC Meeting Minutes (see Key Documents)[[1]](#footnote-2)

*February 20, 2023*

Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

Meetings Update

*February 27 and 28, 2023 Board Meetings*

Mr. Lange reviewed highlights of the February 27, 2023 Board Committee Meetings and the disposition of items considered at the February 28, 2023 Board of Directors Meeting.

Review of ERCOT Market Impact Statements/Opinions and Independent Market Monitor (IMM) Opinion (see Key Documents)

Ann Boren presented the ERCOT Market Impact Statements and ERCOT Opinions for Revision Requests to be considered by TAC, and noted the IMM opinion on Other Binding Document Revision Request (OBDRR) 044, Related to NPRR1085, Ensuring Continuous Validity of Physical Responsive Capability (PRC) and Dispatch through Timely Changes to Resource Telemetry and Current Operating Plans (COPs).

Protocol Revision Subcommittee (PRS) (see Key Documents)

Martha Henson reviewed PRS activities and presented Revision Requests for TAC consideration.

*Nodal Protocol Revision Request (NPRR)1145, Use of State Estimator-Calculated ERCOT-Wide TLFs in Lieu of Seasonal Base Case ERCOT-Wide TLFs for Settlement*

Market Participants offered administrative clarifications to NPRR1145. Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

*NPRR1155, Attestation Regarding Market Participant Citizenship, Ownership, or Headquarters*

Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

*2023 PRS Goals*

Ms. Henson presented the 2023 PRS Goals for TAC consideration. Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

Other Binding Documents (see Key Documents)

*OBDRR044*

Market Participants reviewed OBDRR044 and the 2/14/23 Impact Analysis. Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

Revision Requests Tabled at TAC (see Key Documents)

*NPRR1157, Incorporation of PUCT Approval into Revision Request Process*

Cory Phillips reviewed the 2/23/23 ERCOT comments to NPRR1157. Market Participants noted that the TAC Subcommittees recommended approval of the respective Guide Revision Requests related to NPRR1157. Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

Retail Market Subcommittee (RMS) Report (See Key Documents)

Debbie McKeever reviewed RMS activities and presented Revision Requests for TAC consideration.

*Retail Market Guide Revision Request (RMGRR) 173, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

*Load Profiling Guide Revision Request (LPGRR) 071, Reduced Timing Requirement for Submittal of Usage and Demand Values by Opt-In Entities – URGENT*

*LPGRR072, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

Mr. Lange noted these items could be considered in the [Combined Ballot](#Combined_Ballot_2).

Reliability and Operations Subcommittee (ROS) Report (see Key Documents)

Chase Smith reviewed ROS activities. In response to Market Participants concerns regarding Senate Bill 1281 and NPRR1070, Planning Criteria for GTC Exit Solutions, Mr. Smith summarized ROS discussions of the issues, Prabhu Gnanam summarized ERCOT next steps, and Mr. Smith encouraged Market Participants to attend the March 22, 2023 Planning Working Group (PLWG) to further discuss the issues. Mr. Smith presented Revision Requests for TAC consideration.

*Nodal Operating Guide Revision Request (NOGRR) 248, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

*Planning Guide Revision Request (PGRR) 104, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

*Resource Registration Glossary Revision Request (RRGRR) 034, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

Mr. Lange noted these items could be considered in the [Combined Ballot](#Combined_Ballot_2).

*2023 ROS Goals*

Mr. Smith presented the 2023 ROS Goals for TAC consideration. Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

Wholesale Market Subcommittee (WMS) Report (see Key Documents)

Eric Blakey reviewed WMS activities and requested TAC direction on maintaining the Resource Cost Working Group (RCWG). Market Participants encouraged WMS to maintain a forum for review of variable and fixed Resource costs, continue to seek leadership for RCWG, and consider if a task force with a more informal structure and co-chairs would be more appropriate to address the limited participation and advocacy issues. Mr. Blakey presented Revision Requests for TAC consideration.

*Commercial Operations Market Guide Revision Request (COPMGRR) 049, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

*Settlement Metering Operating Guide Revision Request (SMOGRR) 026, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

*Verifiable Cost Manual Revision Request (VCMRR) 036, Related to NPRR1157, Incorporation of PUCT Approval into Revision Request Process – URGENT*

Mr. Lange noted these items could be considered in the [Combined Ballot](#Combined_Ballot_2).

Market Credit Working Group (MCWG) Report (see Key Documents)

*Formation of New Credit and Finance Sub Group (CFSG) and Charter*

Brenden Sager summarized discussion at the March 14, 2023 MCWG meeting and presented the draft CFSG Charter for TAC consideration. Market Participants offered clarifications to the charter to accommodate CFSG members appointed by the Consumer Board Member. Mr. Lange noted these items could be considered in the [Combined Ballot](#Combined_Ballot_2). Ms. Boren reviewed CFSG next steps to confirm membership and leadership.

TAC Procedures (See Key Documents)

Market Participants reviewed clarifications to the TAC Procedures for inclusion of “Sub groups.” Mr. Lange noted this item could be considered in the [Combined Ballot](#Combined_Ballot_2).

Phase 2 Bridging Options (see Key Documents)

Kenan Ögelman summarized the six ERCOT Phase 2 Market Redesign bridge solutions concepts being considered, noted that ERCOT received stakeholder comments and will continue to accept comments, stated that ERCOT is developing its recommendation, and offered to host a workshop for further stakeholder discussion of the issues. Market Participants discussed the concepts being considered, requested a landing page on ERCOT.com for bridging solutions documents, and requested further discussions of the issues as a voting body. Mr. Lange confirmed the March 29, March 31, and April 10, 2023 Special TAC meetings to enable TAC sufficient opportunity to discuss the issues and develop a TAC recommendation on the bridging solutions for consideration at the April 17, 2023 Reliability and Markets Committee meeting and April 18, 2023 Board of Directors Meeting.

ERCOT Reports (see Key Documents)

*Review of Potential Price Correction for Feb. 5, 2023 – Generic Transmission Constraint (GTC) Error Impacting Real-Time*

Dave Maggio summarized the GTC error impacting Real-Time prices; noted that ERCOT issued a public notice on February 7, 2023 and Market Notice M-A022123-01 Potential Price Correction - Generic Transmission Constraint (GTC) Calculation Error Impacting Real-Time Market (RTM) on February 21, 2023; presented the analysis of price and Settlement impacts for Operating Days (ODs) February 5 and 6, 2023; and stated that potential price corrections for OD February 5, 2023 will be considered at the April 18, 2023 Board of Directors meeting.

*Winter Storm Elliott – Load Forecast and Resource Performance Update*

Jeff Billo presented the Mid-Term Load Forecast and Winter Storm Elliott Review, summarized forecast error sources, and reviewed the ERCOT anticipated corrective actions. David Kezell presented the ERCOT Winter 2022-2023 Inspections and Generation Performance during Winter Storm Elliot Report, reviewed next steps, and encouraged Market Participants to attend the April 19, 2023 Summer Weatherization Workshop for Generation Resources and Transmission Service Providers (TSPs).

*ERCOT Contingency Reserve Service (ECRS) Market Readiness*

Matt Mereness presented an update on the ECRS project and encouraged Market Participants to attend the April 3, 2023 ECRS Market Readiness and Qualification Workshop.

*Real-Time Cooptimization (RTC) Update*

Mr. Mereness provided an update on the status of the RTC project.

Other Business

*Develop Goal Review process*

Mark Dreyfus reminded Market Participants of the newly adopted TAC Goal #18, Review market design changes and reliability enhancements implemented following Winter Storm Uri and the subsequent legislative and regulatory requirements to ensure consistency of holistic market design, and requested TAC assign an action item to take up and review one adopted element, such as: Firm Fuel Supply Service (FFSS); NPRR1105, Option to Deploy Distribution Voltage Reduction Measures Prior to Energy Emergency Alert (EEA); NPRR1108, ERCOT Shall Approve or Deny All Resource Planned Outage Requests; Emergency Response Service (ERS); Operating Reserve Demand Curve (ORDC) etc. at each TAC meeting in 2023. Mr. Lange confirmed this item be added to the TAC Action Items List.

Combined Ballot

**Bryan Sams moved to approve the Combined Ballot as follows:**

* **To approve the February 20, 2023 Meeting Minutes as presented**
* **To recommend approval of NPRR1145 as recommended by PRS in the 3/8/23 PRS Report as revised by TAC**
* **To recommend approval of NPRR1155 as recommended by PRS in the 3/8/23 PRS Report**
* **To approve the 2023 PRS Goals as presented**
* **To recommend approval of OBDRR044 as submitted and the 2/14/23 Impact Analysis**
* **To recommend approval of NPRR1157 as recommended by PRS in the 2/9/23 PRS Report as amended by the 2/24/23 ERCOT comments**
* **To recommend approval of RMGRR173 as recommended by RMS in the 3/7/23 RMS Report**
* **To recommend approval of LPGRR071 as recommended by RMS in the 3/7/23 RMS Report**
* **To recommend approval of LPGRR072 as recommended by RMS in the 3/7/23 RMS Report**
* **To recommend approval of NOGRR248 as recommended by ROS in the 3/2/23 ROS Report**
* **To recommend approval of PGRR104 as recommended by ROS in the 3/2/23 ROS Report**
* **To recommend approval of RRGRR034 as recommended by ROS in the 3/2/23 ROS Report**
* **To approve the 2023 ROS Goals as submitted**
* **To recommend approval of COMPGRR049 as recommended by WMS in the 3/1/23 WMS Report**
* **To recommend approval of SMOGRR026 as recommended by WMS in the 3/1/23 WMS Report**
* **To recommend approval of VCMRR036 as recommended by WMS in the 3/1/23 WMS Report**
* **To form the Credit and Finance Sub Group (CFSG) and approve the charter as revised by TAC**
* **To approve the TAC Procedures as revised by TAC**

**Kevin Hanson seconded the motion. The motion carried unanimously.** *(Please see ballot posted with Key Documents.)*

Mr. Lange adjourned the March 21, 2023 TAC meeting at 1:07 p.m.

1. Key Documents referenced in these minutes may be accessed on the ERCOT website at:

   <https://www.ercot.com/calendar/03212023-TAC-Meeting> [↑](#footnote-ref-2)