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REVIEW OF WHOLESALE ELECTRIC MARKET DESIGN	**§ §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

COMMENTS OF ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC. IN RESPONSE TO COMMISSION STAFF'S QUESTIONS

Electric Reliability Council of Texas, Inc. (ERCOT) respectfully submits these comments in response to Public Utility Commission of Texas (PUC) Staff's request for comments dated October 25, 2021. ERCOT's response addresses questions 2, 3, and 14. ERCOT reserves the right to provide additional comments as appropriate.

EXECUTIVE SUMMARY

1. ERCOT's current Ancillary Service (AS) suite has a mixture of response times and durations that can be combined to address different risks. ERCOT is currently developing a timeline for implementation of ERCOT Contingency Reserve Service (ECRS)—an additional AS type that will provide a more targeted and cost-effective mechanism for addressing future ramping and variability on the ERCOT grid.
2. Adding an additional AS product in the near term will impact the number of Resources currently able to provide a particular AS unless those Resources have sufficient time to meet any new AS requirements.
3. ERCOT requests that the Commission consider impacts to ERCOT systems and staffing when considering the timing for implementation of a near-term AS product and a Load Serving Entity (LSE) obligation plan.

COMMENTS

Question 2: What modifications could be made to existing ancillary services to better reflect seasonal variability?

ERCOT Response:

Under ERCOT's current methodology for determining minimum AS quantities, the required minimum quantity of each AS type varies by month and hour, and is updated at least annually. This allows ERCOT to capture uncertainties associated with intra-day/month/seasonal variability in AS requirements. ERCOT establishes all minimum AS quantities for all hours in a given year by December of the prior year based on historical observations and expected growth of Intermittent Renewable Resources (IRRs). This methodology allows ERCOT to increase posted AS requirements (daily or monthly) if needed based on expected operating conditions. Below is a summary of the current AS methodology for each AS type:

- Regulation Service - Regulation Service is an AS that consists of either Regulation Down Service (Reg-Down) or Regulation Up Service (Reg-Up). Regulation Service Resources can be deployed to balance supply and demand between Security Constrained Economic Dispatch (SCED) runs to maintain ERCOT System frequency within predetermined limits according to ERCOT Operating Guides. Resources providing Regulation Service receive a signal from ERCOT to increase or decrease output every four seconds, based on ERCOT System needs. Regulation Service requirements for each Operating Hour in each month are calculated based on an analysis of net Load changes (i.e., Load minus wind and solar generation) and historical Regulation Service deployments for the same hour of the same month for the past two years. The historical performance of ERCOT's frequency control and projected increases in wind and solar generation capacity is also taken into account in determining Regulation Service requirements for an upcoming year.
- Responsive Reserve Service (RRS) – RRS is an AS that provides operating reserves intended to quickly respond to frequency decay, help restore frequency, provide energy or continued Load interruption during an Energy Emergency Alert (EEA), and provide backup regulation. RRS provides operating reserves that can quickly respond to frequency deviations to stabilize the ERCOT System without direct control from ERCOT. ERCOT performs an analysis for each hour of each month to determine the amount of RRS needed

based on expected diurnal load, solar, and wind patterns and historical system inertia. ERCOT currently procures a minimum of 2300 MW of RRS.

- Non-Spin Reserve Service (Non-Spin) – Non-Spin is an AS that is provided by On-Line Generation Resources and Off-Line Generation Resources and Controllable Load Resources (CLRs) capable of providing capacity within 30 minutes to replace the loss of generation capacity or address net Load forecast errors. Non-Spin requirements for each Operating Hour in each month are calculated based on an analysis of net Load uncertainty and net Load ramp for the same hour of the same month for the past three years. The impact of projected increases in wind and solar generation capacity for the upcoming year is also taken into account in determining Non-Spin requirements for an upcoming year. Upon the implementation of NPRR1093, Load Resource Participation in Non-Spinning Reserve, Non-CLRs will be able to qualify and offer to provide Non-Spin.

The current suite of AS has a mixture of response times and durations that can be combined to address different risks, such as forthcoming solar ramping. ERCOT is currently developing a timeline for implementation of an additional AS type (ECRS) that will provide a more targeted and cost-effective mechanism for addressing future ramping and variability. ECRS is an AS provided by Off-Line Quick Start Generation Resources and On-Line Resources, including Load Resources, capable of providing MW response within 10 minutes. ERCOT has not yet finalized the methodology for determining the quantities of ECRS to be procured, but it will likely include taking into account hourly net Load variability and system ramping needs for each month.

Question 3: Should ERCOT develop a discrete fuel-specific reliability product for winter? If so, please describe the attributes of such a product, including procurement and verification processes.

a. How long would it take to develop such a product?

b. Could a similar fuel-based capability be captured by modifying existing ancillary services in the ERCOT market?

ERCOT Response:

In the short-term, adding a constraint to an existing AS type would reduce the number of Resources able to provide that AS, which could cause insufficient capacity to cover projected reliability risks. Therefore, in considering the development of any AS product, ERCOT recommends providing Resources with adequate time to meet any new AS qualification requirements. In addition, and as further explained in ERCOT's response to Question 14 below, ERCOT requests that the Commission consider impacts to ERCOT's existing software systems, inflight system upgrades, and other ongoing high-priority efforts currently undertaken by ERCOT staff.

Question 14: How long will the LSE Obligation plan take to implement?

ERCOT Response:

In consideration of the timing and implementation of an LSE obligation plan, ERCOT requests that the Commission consider impacts to ERCOT's existing software systems, inflight system upgrades, and other ongoing high-priority efforts currently undertaken by ERCOT staff. It is likely that the implementation of an LSE obligation plan would require significant system changes—e.g., new, independent clearing engines and/or Market Participant interfaces. While there may be constraints on ERCOT staff to work on new projects, the stand-alone nature of the LSE obligation concept may help mitigate constraints on core software systems, specifically ERCOT's Energy and Market Management System (EMMS).

In implementing an LSE obligation plan, the precise impact cannot be fully assessed until the requirements are defined, but ERCOT anticipates that the greatest impact would be to ongoing and planned changes to ERCOT's commercial settlements and billing systems, and ERCOT's credit system. For example, the following projects involve substantial changes to settlements and billing systems, and credit systems:

- Improvements to the Fast Frequency Response (FFR) AS product;
- The integration of Distributed Generation (DG) and Energy Storage Resources (ESRs);
- Participation of Load Resources in providing Non-Spin;
- Implementation of securitization Debt Obligation Orders; and
- Implementation of ECRS.

Should the Commission decide to implement an LSE obligation plan, ERCOT requests clear and specific direction from the Commission regarding timing. Such direction is essential to help ERCOT ensure timely delivery of the project as design development, revisions to the ERCOT Protocols and Other Binding Documents (OBDs), and reprioritization of current and prospective projects would be required prior to implementation.

ERCOT appreciates the Commission's consideration of these comments and would be pleased to provide any additional information the Commission may request.

Respectfully submitted,

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