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Public Utility Commission of Texas

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Commissioner Memorandum

TO: Chairman Peter M. Lake
Commissioner Lori Cobos
Commissioner Jimmy Glotfelty
Commissioner Kathleen Jackson

FROM: Commissioner Will McAdams

DATE: February 15, 2023

RE: February 16, 2023 Open Meeting, Item No. 23 – Project No. 52373 – *Review of Wholesale Electric Market Design*; Item No. 24 – Project No. 53298 – *Wholesale Electric Market Design Implementation*

For the last twenty-two months this Commission has worked to construct a framework by which Texans may be assured their health and safety will be protected within ERCOT. An essential component to this framework is adoption of a reliability standard for the ERCOT system. Senate Bill 3 and the Commission's second blueprint for market redesign identified the need to establish such a standard and the associated reliability metrics. This standard will inform not only the Performance Credit Mechanism but also many upcoming time-sensitive policy decisions.

The Commission has struggled with the notion of establishing a reliability standard for over 12 years since the formation of Project No. 40000 in 2011 by Chairman Donna Nelson.[1] That project was initiated to review the resource adequacy needs of ERCOT in the light of pending federal environmental regulations to include the Section 316(b) of the Clean Water Act, emissions limits related to the Clean Air Act, the Clean Air Transport Rule, and Coal Combustion Residuals Disposal regulations.[2] The fear at that time, as is the case today, is that enhanced environmental regulations will force the retirement of dispatchable generation plants, and limit ERCOT's ability to reliably meet the demands of a growing economy and state.

Ultimately, the Commission took no action in establishing a reliability standard. However, that project set parameters for the Commission to consider when evaluating a potential goal. These included concepts such as setting the value of lost load, the reliability metric, and the reserve margin.

To better inform our deliberations I have provided background on each of the parameters:

Value of Lost Load (VOLL) – is the value that represents a customer's willingness to pay for reliable electricity service. In 2013, ERCOT commissioned an analysis by London Economics that considered what the appropriate process should be to determine VOLL.[3] The report stated

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[1] Commission Proceeding to Ensure Resource Adequacy in Texas, Docket No. 40000 (Dec. 15, 2011).

[2] Docket No. 40000, Review of the Potential Impacts of Proposed Environmental Regulations on the ERCOT System (Jul. 24, 2012).

[3] Docket No. 40000, Value of Lost Load Literature Review and Macroeconomic Analysis Prepared for ERCOT by London Economics International, LLC (June 18, 2013).

398

that "arriving at an accurate VOLL estimate for the purposes identified by ERCOT will require a comprehensive customer survey process." London Economics described in detail what a survey would look like, as well as where and how it had occurred in other areas of the country. In the end no survey was initiated, and the Commission eventually chose to set VOLL at $9,000.

Preferred Reliability Metric – Today our resource adequacy goal is based on a 0.1 loss of load expectation (LOLE) that underpins a 1-in-10 standard. The problem with the current approach, as we have previously discussed, is that the 0.1 LOLE does not inform us as to the magnitude of the expected reliability event that could be experienced in a 10-year window. By this standard, winter storm Uri - which resulted in over 96 hours of emergency conditions and over 40,000 megawatt hours of unserved energy - was exactly what the system had been built to achieve. A more targeted standard is called for, and other systems are looking at expected unserved energy, loss of load hours, or further refining the 0.1 LOLE to stipulate whether that means 24 hours of outages on a 10-year basis, or one system wide event every 10 years. As I have repeatedly said, any reliability metric we consider should specifically define what the maximum risk to system we are willing to accept and plan the system to meet or exceed this goal.

Target Reserve Margin – ERCOT has a long-established target reserve margin of 13.75%. Studies were undertaken in 2018 and 2021 to analyze a series of possible target reserve margins to determine what the Economically Optimal Reserve Margin (EORM) should be.[4] The EORM was designed to strike a balance between acceptable reliability outcomes weighed against system costs. The 2018 study recommended an EORM of 9.0% and the 2021 study recommended an EORM of 12.25%. While these numbers are not a mandatory reserve margin, the Commission has often referenced these numbers as indicators of resource adequacy on our system during the intervening years.

While this is strong groundwork for us to stand on, I believe that VOLL needs to be studied and updated and a new set of reliability metrics are needed. Both steps will ultimately inform a new target reliability standard for the ERCOT market.

As a first step in this process, I would propose we direct ERCOT to engage a consultant for the purpose of initiating a report that would analyze the value of lost load. I believe this study should look at the value both in aggregate and by customer class and utilize analysis of VOLL in other jurisdictions, macroeconomic analysis, and, importantly, surveys. As the last attempt at a VOLL study was undertaken 10 years ago, we need updated analytics and lessons learned to be incorporated into this new iteration. The report and data will help inform the Commission and the ERCOT Board of Directors on what the range of VOLLs may be considered.

As a second step, and concurrent to the VOLL study, I believe we should direct ERCOT to undertake analysis and identify scenarios for reliability metrics. While our ultimate decision on VOLL could impact these analyses, we will need some working information to guide policy decisions before the VOLL study is likely complete. The produced outcomes from these scenarios could be the subject of technical workshops and stakeholder engagement administered by Commission Staff and ERCOT.

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[4] *Review of the Reliability Standard in the ERCOT Region.* Docket No. 42302, ERCOT Letter to Commissioners & EORM and MERM Report (Oct. 12, 2018); Estimation of the Market Equilibrium and Economically Optimal Reserve Margins for 2024, Astrape Consulting, Jan. 15, 2021 at https://www.ercot.com/files/docs/2021/01/15/2020_ERCOT_Reserve_Margin_Study_Report_FINAL_1-15-2021.pdf.

Finally, we also need to direct ERCOT to look at the questions of deliverability and regionality in the context of these reliability studies. Recent deliverability events in Winter Storm Mara in ERCOT and Winter Storm Elliott in MISO have highlighted how the transmission and distribution systems are keenly interrelated. To better understand the reliability needs in ERCOT we must recognize the threats and opportunities presented by how effectively generation is getting to where it is needed.

I do not expect that we take any action on the reliability standard at our upcoming February 16 open meeting, but simply elicit consideration and deliberation, so that we may ultimately formulate a plan and a process to move forward on such an important task. Before the March 9, 2023 open meeting, I would ask ERCOT staff to file any questions or concerns they would need addressed to go forward with these steps. Additionally, I would ask Commission Staff to bring any thoughts they may have as well.

I look forward to discussing this matter with you at the February 16, 2023 open meeting.