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Public Utility Commission of Texas

Commissioner Memorandum

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

FROM: Commissioner Will McAdams

DATE: June 14, 20223

RE: June 15, 2023 Open Meeting, Item Nos. 20 & 21
Project No. 52373 – *Review of Wholesale Electric Market Design*
Project No. 53298 – *Wholesale Electric Market Design Implementation*

In its memo of January 5, 2023 filed in Project No. 54335, Commission Staff defined the current reliability problem facing the ERCOT System into two categories. The first was Real-Time Market Operational Flexibility where, "the existing energy only market design with the Operating Reserve Demand Curve (ORDC) retains and attracts sufficient installed capacity in the ERCOT power region. However, increased penetration by wind, solar, and battery resources necessitate more operational flexibility."[1] A bridge was recommended to solve this first, more near-term, problem and I believe that it needs to be better defined and clarified.

Currently, the vast majority of new generation interconnections within the ERCOT system are renewable resources, which produce power on an intermittent and variable basis. As renewable resources have increased, the grid operator has needed to procure greater quantities of ancillary services in proportion to the level of renewable penetration to cope with the ever-larger variability in power production. This increase in ancillary service needs has often required ERCOT to procure the most efficient and flexible dispatchable generators to be on standby to meet the challenge of renewable variability. As a result, these facilities are then held out of the real-time energy market to serve as a backstop. What dispatchable generation that remains to participate in our energy market is often the less flexible and inefficient older units in our fleet.

Concurrent to the reduced number of available dispatchable units, ERCOT now operates with a daily conservative operational reserve. Conservative operational reserves denotes a daily target of committed reserves which gives grid operators a greater cushion of available energy before emergency actions need to be taken, including the deployment of certain ancillary services.

As I see it, the problem is this: Ideally, ERCOT expects to see power generators commit enough energy into the day-ahead market to cover the forecasted demand levels for the upcoming operating day. Unfortunately, due to inefficiencies in older units, an inability to meet performance

[1] *Review of Market Reform Assessment Produced by Energy and Environmental Economics, Inc.*, Docket No. 54335, Staff Memo on Comments Responding to E3 Report (Jan. 5, 2023).

constraints for specific ancillary services products, or an inability to tolerate variability in fuel pricing, many older units do not commit in the day-ahead market, either in ancillary services or in energy. As a result, by not making themselves available these generators have obligated ERCOT to use its reliability unit commitment (RUC) process to ensure that sufficient units are available for dispatch during periods of uncertainty.

Before Uri, RUCing, was an option of last resort and rarely used. It is an out-of-market action that artificially skews pricing in the ERCOT market, making energy more expensive for consumers due to increased market volatility, while simultaneously increasing the risk of long-term harm to these units that are being run outside of optimal run cycles. Unfortunately, since the commencement of conservative operations RUCing has become all too common. For example, in the week ending April 2, 2023, ERCOT RUCed seven units, totaling 1600MWs. In contrast, before Uri seven total units might be RUCed over an entire year.

We see clear linkages between the three aspects comprising our operational flexibility problem. As renewables increase, so does the need for ancillary services, and thus so does the amount of RUCing on a seasonal basis within the system. What results is ever-increasing volatility in energy costs to our consumers. RUCed units and their associated megawatts are excluded from the calculation of the reserve cadence to which ORDC adders apply. Put simply, because ERCOT is RUCing units so often the ORDC applies a pricing signal for scarcity in megawatts on the system when in fact scarcity may not exist. Ultimately, as renewables increase on the system these costs to consumers will also increase.

One of the potential solutions to this problem is to bring the price signals in the ERCOT market in line with ERCOT's posture of conservative operations. Many solutions have been suggested in the process of identifying a possible bridging solution, but the leading candidate from ERCOT Staff and more than two-thirds of ERCOT stakeholders has been to establish a multi-step floor for the ORDC. The ORDC was established to incentivize changes in real time energy prices such that prices should rise as operating reserves decline, reflecting diminished reliability and the increased probability of involuntary load curtailments. In a sense, the ORDC works as an economic reserve margin, rather than a physical reserve margin (as would exist in a capacity market).

By adding a multi-step floor, one at 6500MW of remaining reserves and another at 7000MW, ERCOT believes that it is addressing the disconnect between conservative market operations and price signals to generators. Feedback on the proposal from generators has indicated that by establishing a price floor, ERCOT would establish a clearer signal for the generators to self-commit and would mitigate risk for those units that choose to commit. Ultimately, ERCOT asserts that this would reduce RUCing once implemented.

Analysis of these changes applied to 2020 and 2022 appears to confirm this assertion. That modelling demonstrates that the increase in revenue (estimated at approximately $500 million per year), would largely be directed at dispatchable resources (+80% dispatchable) and occurs during the periods of time when ERCOT would have otherwise relied on RUCing.

Whatever course we choose, we should do so with the goal of minimizing the need for reliability unit commitments. Providing our market participants with a market-driven inducement to behave in a manner that the grid operator may better anticipate will, over the short term, save our consumers more than it will cost. These decisions must align with the dispatchable reliability

reserve service from House Bill 1500 which requires ERCOT to reduce the amount of RUCs by the amount of dispatchable reliability reserve services procured.[2]

Ultimately, I believe these solutions work in tandem with the PCM. The adjustment to the ORDC bolsters reliability in the real time energy market, changes to ancillary service products help the day ahead market and creates more operational certainty, while the PCM shores up long-term planning and reliability as an availability market.

I look forward to discussing this matter with you at the June 15, 2023 open meeting.

[2] PURA § 39.159(d)(3)