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PROJECT NO. 52373

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

BROAD REACH POWER LLC'S RESPONSE TO MARKET DESIGN QUESTIONS

Broad Reach Power LLC ("Broad Reach") submits the following comments in response to the questions filed by the Commission on October 25, 2021 in PUC Project 52373, *Review of Wholesale Electric Market Design*. Comments are due by noon on November 1, 2021. These comments are timely filed.

I. INTRODUCTION AND SUMMARY

Broad Reach is a Houston-based Independent Power Producer focused on standalone battery storage (ESR). The company currently owns and operates 300 MW of ESR in ERCOT, with 835 MW expected to come online in 2022, and over 7,000 MW of additional projects currently in the ERCOT queue. One hundred (100) MW of our initial assets are ~10 MW each and built on the distribution grid. During Winter Storm Uri, our assets (60 MW operating at that time) performed at 99.7% availability. Our remaining ERCOT projects are over 100 MW on average and interconnected to transmission, including two 100 MW ESRs recently commissioned. Note that there is over 22,000 MW of standalone ESR currently in the ERCOT queue (see queue summary below).

Broad Reach's view is that standalone ESR is most valuable to ERCOT as an asset that balances the system, taking energy off the grid when there is a surplus, putting energy on the grid when there is a shortage, and providing constant balancing through ancillary services, 24 hours a day. We operate our portfolio of ESRs as a network to ensure this balance and locate our ESRs wherever the grid appears to most need this balancing and congestion management, now and in the future.

The current state of ESR technology is most cost effective when optimizing the asset for one-hour duration energy use and, in some instances, two-hour duration energy use. Costs continue to decrease, so future assets can potentially be optimized for longer durations and be cost effective in the market, though one-to-two-hour duration ESR are equipped to handle almost

all of the challenges faced by the ERCOT system, with the primary exception being long-term generation outages. Note that regardless of the energy duration, an ESR provides grid balancing through ancillary services on a 24-hour basis.

II. RESPONSE TO QUESTIONS

As relates to the Commission's October 25, 2021 request for information, Broad Reach respectfully provides the following comments on certain items identified in the request and in Chairman Lake's matrix of solutions filed October 20, 2021.

- 1. The ORDC is currently a "blended curve" based on prior Commission action. Should the ORDC be separated into separate seasonal curves again? How would this change affect operational and financial outcomes?**

The ORDC should be separated into seasonal curves, and Broad Reach strongly proposes that the standard deviation be adjusted to ensure that the integrated area under the curve is greater than what it has been historically. This change will strengthen the incentive to build new dispatchable generation that can better perform under different seasonal conditions as more predictable revenue for resources will be ensured. With these changes, the Commission would not discriminate against any form of generation technology to ensure the desired outcome of having more dispatchable generation. While any generation operating during times of need would be rewarded, as they should be for providing needed energy at those times, these further changes to ORDC would incentivize new generation that can be optimized to perform for longer term durations at times of day and times of the year when they will be most needed.

Broad Reach does not offer any responses to Questions 2 – 16 posed by the October 25, 2021 memorandum.

III. ADDITIONAL COMMENTS

With respect to the matrix of market solutions provided by Chairman Lake on October 20, 2021, Broad Reach submits the following additional comments for the Commission's consideration.

1. ERCOT Contingency Reserve Service (“ECRS”)

ECRS will be a valuable tool to bring on new generation to perform when energy is most needed due to drops in power from other assets. ERCOT should implement ECRS and single-model ESRs with the EMS upgrade or as soon as possible after the EMS upgrade.

2. Voltage Support

ESRs are inverter-based resources, but unlike other inverter-based resources, ESRs can provide voltage support 24-hours a day regardless of their operating mode (charging or discharging).

IV. ERS INTERCONNECTION QUEUE

As referenced in the introduction and summary section of these comments, please see the below current ERCOT ESR queue where full interconnection studies have been requested:

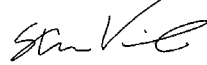
Project Type	Number of Storage Projects	MW of Storage	% of Total Storage MW
Stand-Alone Battery Energy Storage	138	22,307	65%
Battery Energy Storage+Solar	72	9,942	29%
Battery Energy Storage+Wind	3	223	1%
Battery Energy Storage+Other Tech	10	1,640	5%
Total (with FIS Requested)	223	34,113	100%

V. CONCLUSION

Broad Reach appreciates the opportunity to provide input on these important questions and looks forward to continuing to participate in this proceeding and additional market design discussions in pursuit of a more robust and reliable ERCOT system

Dated November 1, 2021

Respectfully submitted,



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**AUTHORIZED REPRESENTATIVE FOR
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BROAD REACH POWER LLC’S RESPONSE TO MARKET DESIGN QUESTIONS

EXECUTIVE SUMMARY

- Standalone energy storage resources (“ESR”) are most valuable to ERCOT as an asset that balances the system, taking energy off the grid when there is a surplus, putting energy on the grid when there is a shortage, and providing constant balancing through ancillary services, 24 hours a day.
- 100 MW of Broad Reach’s initial ESR assets are built on the distribution grid. During Winter Storm Uri, our assets (60 MW operating at that time) performed at 99.7% availability. Broad Reach’s remaining ERCOT projects are over 100 MW on average and interconnected to transmission, including two 100 MW ESRs recently commissioned. There is over 22,000 MW of standalone ESR currently in the ERCOT interconnection queue.
- The current state of ESR technology is most cost effective when optimizing the asset for one-hour duration energy use and, in some instances, two-hour duration energy use. Costs continue to decrease, so future assets can potentially be optimized for longer durations and be cost effective in the market, though one-to-two-hour duration ESR are equipped to handle almost all of the challenges faced by the ERCOT system, with the primary exception being long-term generation outages. Regardless of the energy duration, ESR provides grid balancing through ancillary services on a 24-hour basis.
- The ORDC should be separated into seasonal curves, and we strongly propose that the standard deviation be adjusted to ensure that the integrated area under the curve is greater than what it has been historically.
- ECRS will be a valuable tool to bring on new generation to perform when the energy is most needed due to drops in power from other assets. ERCOT should implement ECRS and single-model ESRs with the EMS upgrade or as soon as possible after the EMS upgrade.

- ESRs are inverter-based resources, but unlike other inverter-based resources, ESRs can provide voltage support 24 hours a day regardless of their operating mode (charging or discharging).

Comments Submitted by:

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