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REVIEW OF MARKET REFORM ASSESSMENT PRODUCED BY ENERGY AND ENVIRONMENTAL ECONOMICS, INC. (E3)	**§**	**PUBLIC UTILITY COMMISSION OF TEXAS**

WATTBRIDGE ENERGY'S RESPONSES TO PUCT STAFF QUESTIONS ISSUED ON NOVEMBER 9, 2022

WattBridge Energy (WattBridge) appreciates the opportunity to share with the Public Utility Commission of Texas (Commission) our responses to the questions issued on November 9, 2022, in conjunction with the E3 report on Phase II of the Market Design Blueprint.

WattBridge, a subsidiary of PROENERGY, develops, owns, and operates quick-start gas-fired generation assets. It was established in 2019 with a primary focus of providing reliable and cost-effective natural gas dispatchable power generation at times when consumers need power the most. WattBridge's assets bridge the inevitable gap in power resources that results from the intermittent nature of wind and solar power. WattBridge has raised $1.8 billion in capital financing during the last 30 months to develop, build, and operate its fast start facilities in the Electric Reliability Council of Texas (ERCOT). To date, WattBridge has 2,300 MW of fast start dispatchable peaking power facilities either in operation or under construction in ERCOT.

I. Commission Questions

1. *The E3's report observes that the PCM has no prior precedent for implementation, does this fact present a significant obstacle to its operation for the ERCOT market?*

WattBridge Response: No. The energy transition requires consideration of new and creative approaches to address new challenges.

2. *Would the PCM design incentivize generation performance, retention, and market entry consistent with the Legislature's and the commission's goal to meet demand during times of net peak load and extreme power consumption conditions? Why or why not?*

WattBridge Response: The PCM can incentivize generation performance and retention by providing more market compensation that is not currently available from the energy and ancillary products. We are supportive of PCM as a Phase II Market design in order to compensate dispatchable generation. It will not facilitate direct market entry immediately because it is not a steady source of revenue that is necessary to support financing for new projects with known prices. Lenders will view it no differently than merchant energy and ancillary services revenues and discount them accordingly, resulting in continued hurdles to financing new generation project development. A counterparty hedge provider who creates a fixed payment stream to support the development financing will similarly discount the value to account for the absence or limited availability of historical PCM prices and for the forward volatility of the PCM value once in operation.

3. *What is the appropriate reliability standard to achieve the goals stated in Question 2? Is 1-in-10 loss of load expectation (LOLE) a reasonable standard to set, or should another standard be used, such as expected unserved energy (EUE). If recommending a different standard, at what level should the standard be set (e.g., how many MWh of EUE per year)?*

WattBridge Response: WattBridge does not have a view on this question.

4. *The E3 report examines 30 hours of highest reliability risk over a year. Is 30 the appropriate number of hours for this purpose? Should the reliability risk focus on a different measure?*

WattBridge Response: WattBridge does not have a view as to the appropriate number of hours for measuring the highest reliability risk over a year. WattBridge does observe that reliability risk can be present throughout the course of the year and is not limited to specific seasons or historical high-demand periods. An effective long-term outcome must sufficiently reward dispatchable generation for its contribution to reliability and resilience.

5. *Over what period should the hours of highest reliability risk be determined? A year, a season, a month, or some other interval? At what point in time should that determination be made?*

WattBridge Response: See response to Question 4.

6. *Would a voluntary forward market for generation offers and a mandatory residual settlement process for LSE procurement provide additional generation revenue sufficient to incentivize resource availability in a way that improves reliability?*

WattBridge Response: This combination and the resulting centralized clearing prices can provide the price transparency on the value of dispatchable characteristics needed to achieve the reliability target. The compensation to incentivize reliability must align with the preferred dispatchable features such as fast-start, firm fuel, duration, short downtime, and durability.

7. *Does a centrally cleared market through ERCOT sufficiently mitigate the risk of market power abuse? Should additional tools be considered?*

WattBridge Response: A centrally cleared market will enhance price transparency, which may help mitigate market power risks.

8. *If the commission adopts a market design with a multi-year implementation timeline, is there a need for a short-term "bridge" product or service, like the Backstop Reliability Service (BRS), to maintain system reliability equivalent to a 1-in-10 LOLE or another reliability standard? If so, what product or service should be considered?*

WattBridge Response: Yes, a short-term service is needed because an effective price-signaling solution will require a period of operation for one to two years after new design implementation.

Even after a 2-year implementation phase per E3, the PCM as a look-back product will not have prices until after the first compliance period. Stakeholders will want to see price formation over a year which means that prices will not be revealed until after the first year of operation. The next logical question relates to the consistency of these prices after the first year's settlement necessitating at least a second year of price formation. Hence, preliminary price signals are not revealed until at least four years from implementation initiation assuming a two-year implementation phase. Once the development, financing, and construction timelines are incorporated, which for WattBridge require approximately two years (a pace well under industry average), the first instance of new operating generation is now 6 years after implementation initiation while renewable resource installation and load continue their growth trajectory.

To incentivize actual generation investment, WattBridge's proposal for the **Firm Dispatchable Generation Investment Program (Program)** as described in our comments to Docket 52373 (Control Number 52373, Item 247) in November 2021 is a way to on-board new generation more simply, directly, and quickly while market redesign implementation is underway. Implementation of PCM market redesign in Phase II is still absolutely required to ensure sufficient predictable minimum compensation to incent new market entrants and/or additional development from current participants such as WattBridge. The Program is meant to jump start development in anticipation of PCM implementation.

Whether through WattBridge or other participants, debt financing will continue to be a significant contributor to facilitating new build. The proposed Firm Dispatchable Generation Program creates a backstop price supported by ERCOT or the State in order to ensure a minimum level of debt financing repayment. Equity and equity returns are still at-risk in the open and competitive market. The Program can have a finite MW amount and/or finite life span once enough new dispatchable generation has been procured.

Conceptually,

- New generation enters into the market with a given and preferred COD (Commercial Operations Date) date range as dictated by the PUCT and ERCOT tied to the target reliability standard.
    - If PCM will be fully functioning by 2026, then new generation assets able to be in-service by December 2026 would qualify.
    - If desired by PUCT, the Program can be limited to a certain amount of new dispatchable generation (e.g., 1,000 – 1,500 MW) which is less than the required new dispatchable generation of 2,100 MW in the Low Cost of Retention Equilibrium (Section 6.4) in the E3 report. This amount is also less than the 1,934 MW of Unconfirmed Retirement Capacity by 2027 as reported in ERCOT's November 2022 Report on the Capacity Demand and Reserve Report in the ERCOT Region, 2023-2032 (CDR).
- The new generation is provided a "Back-Stop" floor price to ensure access to competitive financing.
    - A "Back-Stop" floor price of $12.50/kw-year, as estimated by WattBridge is necessary to facilitate access to competitive financing.
    - While this "Back-Stop" floor price is above the $93.50/kw-year Cost of New Entry (CONE) cited in E3's report, this CONE is sourced from ERCOT's 2020 Reserve Margin Study, is based on a 2018 PJM study of CONE, and is adjusted for ERCOT-specific elements, practically antiquity in WattBridge's current experience.
- The new generation participates in all aspects of the market (energy, ancillary, PCM, any and all relevant new products), essentially as a merchant facility.
- If the achieved market value is above the "Back-Stop" floor price, the project can meet its debt payment requirements without reimbursement.
- If the achieved market value is below the "Back-Stop" floor price, ERCOT or the State will reimburse the difference and allocate the cost to load like the other ancillary services.
- The "Back-Stop" floor price is of limited duration, e.g., 7-10 years, only as necessary to provide reasonable certainty of debt repayment.
- The new generation will have performance requirements and be subject to verification with ERCOT of the achieved market revenue.
- The new generation should have the dispatchable characteristics needed by the grid – e.g., 10-minute fast-start, minimum duration capabilities (48 hour), short maximum downtime (1 hour), voltage support, firm gas transport/supply.

There is no cost to consumers as long as the market revenue achieved is sufficient to repay the debt and is above the "Back-Stop" floor price. It is a market-friendly and market-compatible avenue versus the direct procurement approach as described in the Berkshire proposal and City

of Garland's comments in this project (54335_34_1257822). The contingent *ex post* nature of any reimbursement as true-up to the "Back-Stop" floor price does not adversely affect market price formation unlike the DEC program. It can also be set up as a bilateral procurement with ERCOT and avoid lengthy system development.

If the annual market revenue achieved is $0 for a given year, the maximum exposure to consumers is $150-225 million for 1,000 – 1,500 MW at a $12.50/kw-month Back-Stop floor price. Even in this highly remote situation given many of the Phase I market changes and PCM, this Program is an extremely *de minimis* on-ramp expense for new generation as PCM undergoes implementation.

WattBridge currently has approximately 672 MW of generation in the ERCOT transmission interconnection queue that could be developed and begin service by late 2024 to early 2025. These projects are shovel-ready. Hedge counterparties will likely discount prices or sit on the sidelines to evaluate how the Phase II market design plays out. The typical financing process depends on these hedge counterparties because lenders want minimum cash flow certainty. Absent a direct mechanism to facilitate financing for the construction of WattBridge's upcoming projects as described above, WattBridge's development program will slow down and/or focus elsewhere because the hedge providers and lenders will require visibility to multi-year price formation in the new market. Without the direct (but contingent) mechanism such as this Program, there is likely an approximately 6-year process to overcome price uncertainty

before new projects are installed. In the meantime, renewables will continue to enter the market, and load will continue to grow.

WattBridge's programmatic approach to development has successfully financed and energized the following projects. We can continue to actualize our other development sites in ERCOT during the PCM implementation with our proposed Program and its "Back-Stop" floor price.

- HO Clarke: 384 MW (January and October 2021)
- Topaz: 480 MW (June and August 2021)
- Braes Bayou: 384 MW (March – August 2022)
- Mark One: 288 MW (September and December 2022)
- Brotman: 288 MW (1Q 2023)
- Remy Jade: 288 MW (4Q 2023)
- In Process: 192 MW (mid 2023 – 1Q 2024)

9. *If implementing a short-term design as a "bridge" delays the ultimate solution, should it be considered? Is there an alternative to a bridge solution that could be implemented immediately, using existing products, such as a long-term commitment to buy the additional 5,630 MW of Ancillary services necessary to achieve the 1-in-10 LOLE reliability standard?*

WattBridge Response: No, a "bridge" that delays the ultimate solution should not be considered. As noted in the response to Question 8, the current timeline is already lengthy, and any delay will only suppress investment of new generation and exacerbate the reliability challenges.

10. What is the impact of the PCM on consumer costs?

WattBridge Response: WattBridge defers to E3, ERCOT, and the PUCT to evaluate the ultimate cost to consumers, but there are ways to trim the PCM program cost to consumers by narrowing the generation resources that qualify for credits. First is to limit payment to dispatchable generation during the selected critical hours instead of accrediting all generation on-line including intermittent renewables. Whether intermittent renewables are available during these critical hours is a function of weather and not controllable, i.e., basically happenstance. Second, accreditation should be tiered to differentiate among dispatchable characteristics. Rewarding a gas peaker that can start in 10 minutes in the same way as a steam generator with a multi-hour start ramp that are both generating during the critical hour will not make the grid more resilient for the energy transition. Similarly, rewarding a gas peaker dispatching on interruptible gas in the same way as a gas peaker with firm gas transport and supply will fail to highlight and compensate for dispatchable characteristics that are more beneficial to the grid. Technology neutrality is important, but consumers should only pay for solutions that address the critical grid needs. WattBridge does support PCM as a method to retain assets with the preferred dispatchable characteristics that the grid needs to meet a defined reliability target.

11. *What is the fastest and most efficient manner to build a "bridge" product or service, such as the BRS, in order to start sending market signals for investment in new and dispatchable generation, while a multi-year market design is implemented by ERCOT? Please provide specific steps*

WattBridge Response: Please see the response to Question 8.

12. *In what ways could the Dispatchable Energy Credit (DEC) design be modified through quantity and resource eligibility requirements, e.g. new technology such as small modular nuclear reactors, in such a way that it incentivizes new and dispatchable generation?*

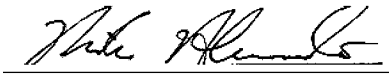
WattBridge Response: No response

* * *

WattBridge appreciates the opportunity to provide this feedback given its experience in developing, financing and quickly implementing fast ramping dispatchable generation to help achieve reliability in ERCOT. We urge the PUCT to enact the required changes quickly to minimize any lull in new dispatchable generation coming on-line that contribute to the resilience of a transitioning grid.

Dated: December 14, 2022

Respectfully submitted,



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EXECUTIVE SUMMARY FOR WATTBRIDGE ENERGY'S RESPONSES TO PUCT STAFF QUESTIONS ISSUED ON NOVEMBER 9, 2022

WattBridge Energy is a leading active developer of fast-start dispatchable generation in ERCOT with 2,300 MW in operation or under construction, having financed and raised $1.8 billion in capital during the last 30 months. WattBridge has approximately 672 MW of additional development projects that could be in service by late 2024 to early 2025. WattBridge offers the following key responses to the questions posed by PUCT Staff.

- New development projects typically require debt financing. Lenders want certainty of repayment. None of the Phase II market designs create that value certainty.
- Phase II market redesign in the form of PCM is still essential to retaining dispatchable assets in the market with sufficient compensation for the desired dispatchable characteristics that contribute to the target reliability standard.
- To jump start development during the PCM implementation, WattBridge proposes that ERCOT or the State offer a "Back-stop" Floor Price of $12.50/kw-mo as described in WattBridge's proposal for the **Firm Dispatchable Generation Investment Program** to create debt repayment certainty for 1,000-1,500 MW of new dispatchable generation that can be in service by December 2026. This "Back-Stop" is contingent so that there is no cost to consumers as long as the market revenue achieved is sufficient to repay the debt and above the "Back-Stop" floor price. Equity and equity returns are still at risk in an open and competitive market. ERCOT would contract bilaterally with the qualified projects to avoid lengthy system development while Phase II market design is underway.
- The PCM cost to consumers could be trimmed by limiting performance credits to actual dispatchable generation during the critical hours and not all generation on the system at that time.
- PCM should also tier eligibility for performance credits that align with the dispatchability characteristics that contribute to the target reliability standard. Technology neutrality is important, but consumers should only pay for solutions that address the critical grid needs.