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PROJECT NO. 54335

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

COMMENTS OF COMPETITIVE POWER VENTURES, INC. ON COMMISSION STAFF'S REOUEST FOR COMMENT

TO THE PUBLIC UTILITY COMMISSION OF TEXAS:

I. INTRODUCTION

Competitive Power Ventures, Inc. ("CPV"), directly and through its affiliates, is pleased to offer the following comments in response to the Public Utility Commission of Texas' ("PUCT") request for comments issued November 10, 2022. CPV is a leading North American electric power generation development and asset management company focused on applying its development, financial, and project management expertise to advance dependable low carbon energy solutions. CPV has decades of experience developing new large greenfield power generation facilities across the major power markets throughout the United States. In addition to its development activities, CPV constructs, owns, and manages many of the operations of its development projects, offers retail electric service in various states to commercial and industrial customers, as well as provides asset management for third party owners of power facilities. As asset manager, CPV has managed eight different generation assets, totaling more than 3,200 MW, in the State of Texas.

In the last several years, CPV has developed, financed, constructed, and commercialized five dispatchable natural gas-fired combined cycle generating facilities totaling over 4,000 MW,

and has a sixth 1,250 MW project currently under construction, all on a merchant basis. CPV has arranged the financing of each project through project specific non-recourse debt, supported by a consortium of financial institutions, in combination with sizable equity investments. The 1,250 MW project currently under construction consisted of $875 million of senior debt facilities and a total project cost over $1.3 billion. CPV's current operating projects are among the newest and most efficient natural gas-fired combined cycle facilities in the ISO-NE, NYISO and PJM control areas. The company also owns and manages wind generation in SPP and is constructing two utility scale solar projects in PJM and SERC. Its current development activities include utility scale solar and land-based wind projects across the United States, as well as new dispatchable natural gas-fired combined cycle power generation with carbon capture technology, which is the type of project under consideration by CPV for the State of Texas.

CPV thus provides a unique perspective in this proceeding as a non-incumbent generation company that relies on the competitive markets to support the financing and commercialization of its dispatchable electric generation development projects.

II. OVERVIEW

CPV is a strong advocate for using competitive market designs as the best and most efficient way to achieve system reliability at the lowest cost to the ratepayer. Foundational in the design of a durable competitive market is the creation of reliability standards that ensure the level of reliability required of the electric grid. Those reliability standards can then be translated into specific types of products and services, the quantities for which can be procured through market mechanisms that appropriately value those products and services. The result is the achievement of those reliability standards at competitively determined just and reasonable rates.

CPV's' recent successes demonstrate that competitive markets are an efficient means to attract new capital to a region to build critical energy infrastructure where and when needed. At the highest level, a good competitive market design will create the appropriate incentives to attract and retain a resource mix necessary to support grid reliability while at the same time incenting needed resource performance across all system conditions. The challenge in Texas, similar to other organized electricity markets, is to appropriately define the market incentives to achieve the desired reliability standards.

Senate Bill 3 ("SB3") rightly directed the PUCT to develop such reliability standards including "the quantity and characteristics of ancillary or reliability services....during times of low non-dispatchable power production....", to incorporate "appropriate qualification and performance requirements for providing services," and to procure "such ancillary or reliability services on a competitive basis ."[1] SB3 further directed that the delivery of these reliability services be obtained from dispatchable generating resources with operating characteristics that support continuous operations and fuel supply.

The Blueprint for Wholesale Market Design issued by the PUCT on January 13, 2022 ("Blueprint") appropriately incorporated the need to develop those reliability standards as part of its Phase II implementation of SB3 and articulated a set of principles which would be the foundation for a market design that could promote the supply of dispatchable generation in Texas[2]. Following the issuance of the Blueprint, the PUCT engaged the energy consulting firm E3 to "assist the PUCT in the development of the Phase II market design and structure reforms to

[1] SB3 Amended SECTION 18. Subchapter D, Chapter 39, Utilities CodeSec.A39.159
[2] See PUCT Approval of Blueprint: Jan 13, 2022

comply with the statutory requirements set forth in SB 3." This engagement included advising on establishing appropriate reliability standards and metrics; the level of needed dispatchable generation; the estimated implementation and consumer cost analysis; the potential dispatchable generation investment outcomes; and a reliability impact analysis.

The E3 Report evaluated six alternative market designs from both a quantitative and qualitative perspective. While E3 recommended the Forward Reliability Market ("FRM") design, PUC Staff determined that the Performance Credit Mechanism ("PCM") best satisfies the requirements of Senate Bill 3 while also adhering to the principles as delineated in Phase II of the Blueprint document for the Load Serving Entity Obligation ("LSEO"). A market redesign construct based on any of these three "in-market" designs, with features further described in the following comments, would be a welcome addition to the ERCOT wholesale market.

III. COMMENTS

CPV believes that to maintain systemwide reliability and incentivize investment in new dispatchable generation, an "in-market" design mechanism, as noted above, is a necessary and significant step forward. The creation of a long term durable competitive wholesale power market would act to retain existing generation, as well as attract new dispatchable resources into the state. Conversely, we concur with the conclusions of E3 that the Backstop Reliability Service ("BRS") and Dispatchable Energy Credit ("DEC") designs, as contemplated, incorporate certain "out-of-market" and non-competitive mechanisms that would undermine the effectiveness of the competitive markets and deter capital from investing in building new merchant (aka: non-contracted) generation.

A. Markets that adhere to competitive principles provide greater revenue certainty and attract more capital.

CPV has followed this proceeding and the prior proceedings post winter storm Uri with an eye toward competitive market design enhancements that would help facilitate the development of a new dispatchable resource in ERCOT. Critical to a project's success in Texas is a market that provides for the opportunity to compete for providing reliability services with products that offer revenues over longer, predetermined time periods. The volatile revenues that have been associated with a nodal energy-only market and the unpredictability of those revenues severely narrows the number of industry players willing to invest debt and equity and significantly increases the cost of capital from those who would participate, creating an unintended barrier to new entry. The dearth of dispatchable energy projects over the last decade is evidence of this market reality.

The need for a reliability-based market construct is further exacerbated by the growing risk of over-reliance on intermittent resources and the impact these resources have on LMP given the additional price uncertainty they create. ERCOT's response in its operating protocols to a more conservative system dispatch recognizes the impact of these resources on system reliability, but the change in operations comes at the expense of sending more robust market signals in the energy market. Incorporating a market-based reliability construct would add a level of stability to the ERCOT market that is absent from its current design: "The LSERO, FRM, and PCM market designs reduce the variability of the annual system costs by transition from a design that is dependent upon uncertain scarcity pricing to a design that has more stable price signals."[3] CPV agrees.

[3] E3 report at page 8

All of the last six dispatchable generation projects CPV has developed and commercialized have been in restructured markets that include reliability standards (aka: the one-in-ten loss of load expectation) and each of those markets have reliability driven market mechanisms designed to attract capital to build generation that would ensure the region meets those reliability standards.[4] The LSEO, FRM and PCM all incorporate some form of market mechanism to ensure resource adequacy but achieve the objective with important differences that will affect a project sponsor's ability to finance future dispatchable generation.

B. An in-market reliability mechanism with the proper structuring will attract new dispatchable generation.

Both the E3 Report and the Staff Memorandum of November 10, 2022 affirmatively answer whether and how the three in-market reliability mechanisms achieve the objectives of SB3 and comport to the principles from the PUCT's approved Blueprint. The E3 Report suggests that each of these designs can be adjusted or modified to incorporate preferred mechanisms within their designs, and to that end, CPV offers its perspective on the preferred mechanisms within a reliability construct that would enhance the ability to attract new dispatchable generation – such as the new dispatchable generation project CPV is considering for the ERCOT market.

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[4]CPV also notes the critical importance of other economic development programs that seek to attract new investment within the state. Every one of CPV's successful dispatchable generation projects were able to arrange for mutually beneficial tax agreements with the local municipality to support the advancement of those projects. In Texas, the Section 313 program has been available to incent new investment, including dispatchable generation, although that program is set to expire at the end of this year with no replacement program in place. Without an economic development incentive program to address local school district tax obligations for new dispatchable generation projects, those projects will be at a significant disadvantage and the ability to attract the necessary investment for new dispatchable generation in the state of Texas will be impaired.

i. **A centrally cleared vs. bilateral market design.** A necessary market construct, and one preferred by E3 and other recognized market experts, is to use a centrally cleared market to procure the reliability attributes under these designs. The level of transparency in establishing the reliability standards and how the market responds to those requirements provides a significant benefit for those looking to invest capital in these markets because it creates liquidity that can be relied upon by investors at prices that can be forecasted based on well understood and modeled market inputs. A centrally cleared market is also economically efficient and more competitive. Moreover, and as noted in the E3 report, a centrally cleared market is more amenable to addressing market power concerns while incenting all resources to engage with the market at their most competitive price[5].

ii. **Forward Procurement Timing.** Creating incentives for the size and duration of new dispatchable generation lends itself to incorporating a forward commitment for the new reliability product. The PUCT should thoughtfully consider establishing a forward market design (procurement of the reliability service longer than one year in advance) that would provide an appropriate on-ramp for new resources to complete siting, permitting, engineering and arrange financing. Such a forward-looking market that provides the project sponsor with a portion of its revenue stream known in advance offers a significant benefit in arranging financing for the project as well as provides future stability for existing projects to invest in their continued availability. Similarly, the forward procurement timeline is helpful in sending existing generators price signals to inform potential mothball or retirement decisions. The forward price signal telegraphs

[5] See E3 Report Table 53

information to other market participants and the system operator that they can use to participate in and use to manage the transition of the resource mix within the region, and with sufficient lead times to make adjustments, as needed.

Such a forward commitment and obligation also works well with the retail side of the business as the cost of this reliability service will be known years in advance of the actual delivery period. This will allow better and more accurate pricing of retail load transactions in comparison to a prompt market. Both ISO-NE and PJM continue to have robust retail markets across multiple states while also containing forward procurement of reliability services for generators. As noted above, increasing the level of revenue certainty significantly improves the ability to raise financing for new dispatchable generation. A multi-year forward procurement within a centrally cleared market is a commercially reasonable and economically efficient mechanism to attract investment in new generation.

iii. **Performance Mechanisms.** For a reliability product to be effective, there must be delivery obligations that are both meaningful and timely. Each of the in-market proposals satisfy this requirement in regard to the performance obligation (i.e.: delivering the services during the top 30 hours) and as to the proposed consequence for non-performance (i.e.: tying the underperformance hours to equate to the CONE of a new resource (≈$3,000 MWh)), thus satisfying the requirement of SB3. However, CPV believes that the timing of when these performance hours are determined, when a generator is deemed to be non-performing, and importantly, when the financial consequence from that performance is settled could be significantly more effective with relatively modest adjustments.

Specifically, each of the in-market designs propose an ex-post measurement for the top thirty at-risk hours during the year. While looking at performance on an ex-post basis guarantees that all resources will be evaluated during the most constrained hours during the year, the lag between performance and payment/charges is unnecessary for the designs to deliver on its objectives and pushes the bounds of commercial reasonableness from two perspectives: First, it will be unknown to all participating resources what their level of liability to the market could be throughout the year – in the worst case, all of the thirty at-risk hours could occur in the last two days of the obligation period. Given the proposed size of the penalty for non-performance, this unknown liability creates an unnecessary financial risk that due to it randomness will not drive behavior to improve availability, but rather would simply decrease the attractiveness for investors. Second, that same level of financial risk must also be accounted for in the financial assurance requirements that will be required by ERCOT from each participant to protect the financial viability of the markets – and financial assurance could potentially be required for the full amount of the at-risk dollars for all resources participating. To address these concerns, the timing of measurement and settlement of performance should be over shorter intervals within the year.

Moreover, the goal of ensuring that these thirty hours are the only hours in which performance should be measured takes a too narrow reading of the benefits derived from these designs. The fact that resources are at risk for their performance during the tightest hours of the year provides significant incentive for them to deliver on that commitment across the entire year. Ensuring that there are at least a minimum number of hours in which they will be measured across the year provides adequate incentive for

those resources to perform in all hours. To this end, CPV suggests allocating those thirty hours across the year (either monthly or seasonally) to better align the market objective with commercial concerns.[6] These changes would result in the same expected performance from all participating resources.

In place of determining performance hours at the end of the year, CPV recommends setting a defined number of performance hours in any month or season. For example, fifteen of the thirty performance hours could be set between December through February each winter, with no less than three hours in any individual month. Thus, as the season progresses, each resource will be measured in the top three hours each month, which will be known and settled at the end of the month, and an additional six hours would be determined and settled at the end of the season. This would both address the commercial/credit issues discussed above, but also provide a more certain and manageable obligation against which resources would participate in the auction. The same could be done across the summer months as well. Finally, the performance requirement need not be limited to just those thirty hours in a year – performance hours could also include any hour in which there was a reserve shortage on the system, even above the pre-determined fixed hours recommended here.[7]

Finally, CPV suggests that the measurement of non-performance should be based primarily on the availability of the resource in each performance hour and those actions

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[6] Hourly allocations would consider periods that are at risk due to extreme weather, high planned outage periods, expected high load periods, or other considerations that contribute to system security risks or energy adequacy risks.

[7] We note that one of the main criticisms of the ISO-NE Pay-for-Performance reliability mechanism is the dearth of performance hours actually incurred. After all, it is the goal of the system operators not to plan or operate the system into reserve shortage conditions – thus in the four years since this design was adopted there has only been one single event for a total of 2.4 hours. The proposals here which require measurement in at least a fixed number of hours per year is a significant improvement to the ISO-NE design.

that the reliability resource can control. For example, the reliability resource should not be penalized if it is available but not dispatched, if it is in planned maintenance approved by ERCOT, or if it is unavailable due to transmission outages.

iv. **Resource Accreditation.** A key requirement of SB3 is to obtain the reliability benefits associated with dispatchable generation on the system and to do so using competitive market principals. Each of the in-market proposals incorporate a form of the thirty-hour performance obligation with sufficiently strong performance consequences, which should act to discipline participants into offering the appropriate level of reliability into the market. More specifically, the analysis performed by E3 indicates that dispatchable generation is expected to perform extremely well during those top thirty hours. Thus, understanding the reliability contribution of each resource in meeting the system reliability standard will be an important component of an effective reliability market. A well-designed competitive market will deter a market participant from over committing a resource due to the financial consequences. In this way, the natural competitive forces serve to police behavior of the market participants. CPV also recognizes that a centralized accreditation process, which is widely used in other RTOs, can provide an additional level of confidence on the ability of market participants to be physically capable of delivering on their reliability commitments. Either methodology should result in the same market outcome if the performance penalty mechanism is structured properly and either should satisfy the requirements of SB3.

IV. CONCLUSION

CPV appreciates the opportunity to provide these comments to the PUCT in support of its efforts to develop and adopt a Phase II market design that will incent new

dispatchable generation to meet the reliability needs of ERCOT and the State of Texas. As a leading electric power generation development and asset management company seeking to advance a new dispatchable generation resource in the ERCOT market, we believe that implementing the recommendations of E3 or the PUCT staff would be a significant step in meeting the objectives of the Governor, the legislature through its SB3, the PUCT as outlined its Blueprint document and would serve the needs of the electric consumers in the Lone Star State. CPV hopes that its recommendations provided herein will provide a valuable perspective to the PUCT in this proceeding.

Respectfully submitted

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

EXECUTIVE SUMMARY
COMPETITIVE POWER VENTURES, INC.

- Competitive Power Ventures, Inc. ("CPV") is a leading North American electric power generation development and asset management company with decades of experience in developing large new greenfield power generation projects across the United States. In the last several years, CPV has developed, financed, and constructed five new dispatchable generating facilities totaling over 4,000 MW, with a sixth 1,250 MW project scheduled for commercial operation in 2023 - all merchant developments in regions with reliability markets.

- CPV offers a unique perspective in this proceeding as a non-incumbent generation company seeking to enter the Texas market with a new dispatchable generation project.

- CPV is a strong advocate for competitive markets as the best and most efficient way to achieve system reliability at the lowest cost for ratepayers.

- Incorporating a reliability standard and a market mechanism to achieve that standard is necessary and appropriate, in compliance with SB3, and will create incentives for new development.

- Any of the "in-market" proposals would be more effective in attracting new development with the following modifications:

    - The market design should include a centrally cleared market to provide more liquidity, transparency, and competition among resources, and to better address market power concerns.
    - The market design should include a forward procurement to provide adequate time for siting, permitting, financing, etc... of new generation. A more knowable revenue stream will enhance financing opportunities while sending appropriate price signals to existing resources. Forward procurement supports retail energy suppliers with knowable market costs in advance of delivery obligations.
    - The performance obligation should be measured and settled more frequently than annually. Performance hours should be distributed across the year based upon expected risks across the year - measured and settled both monthly and seasonally to reduce the risk of unknown potential liability and to address Financial Assurance requirements that would otherwise be needed by ERCOT to protect the market from those liabilities. Performance should be determined based upon availability of the resource within its control.
    - Accreditation within the reliability market should reflect the resource's performance during stressed system conditions and could be achieved through disciplined market design. However, ERCOT could administer a centralized accreditation process that reflects each resources contribution to reliability across the year.