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Received - 2022-03-11 03:28:20 PM
Control Number - 52373
ItemNumber - 350

PROJECT NO. 52373

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

RELIABILITY SERVICE PROPOSAL OF
SOUTH TEXAS ELECTRIC COOPERATIVE, INC.

TO THE HONORABLE PUBLIC UTILITY COMMISSION OF TEXAS:

Comes Now, South Texas Electric Cooperative, Inc. ("STEC") and provides the following information regarding, and including, its proposed Reliability Service, attached hereto, for review by the Public Utility Commission of Texas ("PUCT" or "Commission") in an effort to continue to work toward resolution of the reliability problems in the Electric Reliability Council of Texas, Inc. ("ERCOT") market. STEC respectfully requests that the Commission vote to modify the Request for Proposals to allow for this proposal to be studied along with other market proposals.

STEC has participated in the Commission's efforts to resolve the reliability problems associated with the lack of dispatchable generation in the ERCOT market, including well before Winter Storm Uri. STEC has recognized this issue for a long time since, although STEC plans for capacity needed to serve its Members' loads, when there are capacity shortfalls, its Member's loads are left in the dark. Following Winter Storm Uri, STEC provided comments on various proposals in both Phase I and Phase II to resolve the reliability problems that existed before, but were laid bare, in the wake of Winter Storm Uri.

In reviewing and analyzing various structures, STEC sought to take both the statutory requirements of Senate Bill 3 and the directives to the Commission in Governor Abbott's July 6th letter to propose a Reliability Service that complies with all of the related concepts—establishing a reliability standard to meet the needs of the ERCOT system, ensuring appropriate reliability in extreme weather, ensuring adequate generation in times of low non-dispatchable generation, and establishing non-discriminatory cost allocation, all while utilizing the transparent, liquid and market-based framework that already exists with respect to capacity-based ancillary services ERCOT uses today.

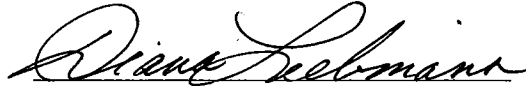
The Reliability Service is much more targeted than other reliability programs such as load-side obligations in effect in the California Independent System Operator, the Midcontinent Independent System Operator or the Southwest Power Pool. It is also distinct from the centralized forward capacity markets utilized in the PJM Interconnection and by the New York Independent System Operator. In particular all of the above allocate all costs to load, requiring load to bear the full cost of reliability, rather than using cost causation to assign the costs for reliability to all market participants (including both thermal and renewable generators), and all loads, that contribute to a lack of reliability on the system.

The Reliability Service is organized by its Key Elements that include the related provisions of both SB 3 and the Governor's July 6th letter that formed the basis for the inclusion of the elements in the design of the Reliability Service. The Reliability Service is intended to support the grid by encouraging dispatchable capacity, providing incentives for firming, and making sure that entities that are participating in the Reliability Service perform.

STEC has been developing its solutions to be consistent with the direction of the Texas Legislature and the Commission's recognition that crisis-based grid management through the energy-only market will not provide for the well-being of Texans or the growth of the Texas economy. STEC has been working with other market participants to build consensus around its Reliability Service and has added more detail to its proposal in order that the Commission and market participants can better analyze the Reliability Service.

STEC respectfully requests the Commission's consideration of its proposed Reliability Service to be studied along with the other market redesign proposals as part of the study process for which the Request for Proposals has been issued. STEC looks forward to continuing to work with the Commission on these important issues.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Diana Liebmann", written in black ink.

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ATTORNEYS FOR SOUTH TEXAS
ELECTRIC COOPERATIVE, INC.

RELIABILITY SERVICE

OVERVIEW:

South Texas Electric Coop., Inc. ("STEC") has developed this proposal for the Public Utility Commission of Texas ("PUCT" or "Commission") to create a **Reliability Service** procured by the Electric Reliability Council of Texas, Inc. ("ERCOT") as an improvement upon the current set of reliability tools and ERCOT capacity auctions. The Reliability Service is a preferred alternative to other pending proposals because it is market-based, targeted to dispatchable generation, includes performance-based incentives, includes non-discriminatory cost-allocation based on cost-causation principles, and, as a result, directly aligns with Sections 14 and 18 of Senate Bill 3¹, as well as the Governor's July 6, 2021 directives.² This Reliability Service would be an expansion of the existing set of ERCOT ancillary services and, as such, involves the auctioning of the Reliability Service in a transparent, liquid manner that is more efficient and targeted than other existing capacity-related programs across the country, including certain load-side obligation constructs (utilized in CAISO, MISO and SPP), and multi-year centralized forward capacity markets (utilized in PJM and NYISO).

There are six key elements to the Reliability Service that are described in greater detail in this document.

KEY ELEMENT 1. RELIABILITY STANDARD ESTABLISHMENT:

The first key element of the Reliability Service proposal is the establishment of a reliability standard that maintains a defined reserve margin. A defined reserve margin serves two purposes: (i) it establishes a very specific minimum target that must be met to prevent prolonged rotating outages in the ERCOT region³; and (ii) it provides an accurate benchmarking tool that allows ERCOT, the PUCT, the Legislature, and the Governor⁴ to determine whether the reliability objectives of the ERCOT region are achieved.⁵

As noted in STEC's previous comments filed with the Commission, STEC has consistently been a proponent of the 1-in-10 year loss of load event reliability standard, because it minimizes the occurrences of firm load shed while also providing a reasonable tradeoff in the cost of doing so. This standard is not a new concept, was used previously for many years as the standard in the ERCOT region and serves as the planning reserve basis for many other regions in the country. It has proven to be an effective planning standard, and would result in ERCOT having at a minimum, the same level of reliability as other markets. The 1-in-10 year loss of load event is also a value

¹ Senate Bill 3, Act of June 8, 2021, 87th Leg., R.S., Ch. 426, §§ 1-41 ("S.B. 3").

² Letter from Governor Abbott to the Public Utility Commissioners dated July 6, 2020. (the "Governor's Letter").

³ Public Utility Regulatory Act, Tex. Util. Code Ann. §§ 11.001-66.016 (West 2007 & Supp. 2021) ("PURA") § 39.159(b)(1)-(2).

⁴ See Governor's Letter at pp. 1-2.

⁵ PURA § 39.159(b)(2).

that is readily known to ERCOT and the PUCT as it been regularly calculated by an independent consultant for ERCOT⁶. It is expected that the independent study of the 1-in-10 year loss of load event value for reserves will continue to be regularly updated in the future. As a result, the number is identifiable, predictable, readily available, and easily understood.

STEC acknowledges that there are other standards, such as Loss of Load Hours or Estimated Unserved Energy, that could be used to establish a reserve margin in the ERCOT region, each of which assume a level of acceptable load shed and result in higher incidences of firm load shed. The Texas Legislature, the Governor, and Texas consumers have clearly spoken -- measures that result in load shed or involuntary outages that can cause great economic damage and loss of life are unacceptable.

KEY ELEMENT 2. THE TARGET VOLUME TO BE PROCURED:

As with any proposal, the procured volume amount must be defined. For purposes of this reliability service, STEC believes that the procured amount must be sufficient to meet the forecasted peak net load demand, plus the defined reserve margin identified above in Key Element 1.

As non-dispatchable generation has continued to saturate the ERCOT market, the times of highest system stress have shifted from peak load intervals, when overall demand is highest, to the times when net load is greatest. These peak net load intervals correspond to the periods when load is high and renewables are least available. This fact has made it very apparent that constructing a procurement methodology that provides added reliability to the system must consider, in particular, the time of peak net load. As such, the peak net load forecast utilized for this Reliability Service must include a conservative estimation of the risk inherent in the system at times of low non-dispatchable power production in the ERCOT region⁷. Relying upon the load and non-dispatchable resource inputs found in ERCOT's biennial Capacity Demand and Reserves (CDR) report⁸ is insufficient for determining the volume to be procured, and historically those inputs have not been representative of the times of highest stress on the ERCOT system. A more conservative estimate must be used. Therefore, STEC proposes that the procured volume must represent an extrapolation of the highest peak net load observed over no less than the prior five years for a given season. A five-year window will moderate the highest and lowest reliability levels and use more current values for loads and renewables on the system.

⁶ Astrape Consulting: "Estimation of the Market Equilibrium and Economically Optimal Reserve Margins for the ERCOT Region for 2024" found at <https://www.astrape.com/?download=9248>.

⁷ PURA § 39.159(b)(2).

⁸ The CDR calculates the contribution of solar and wind resources as the "average capacity during the 20 highest system-wide peak Load hours for a given year's summer and winter Peak Load Seasons." ERCOT Nodal Protocols 3.2.6.2.2(1).

To comply with the statutory requirements of Senate Bill 3, STEC believes that the service should be procured annually, and on a seasonal basis, for a period of time that is no less than one year into the future⁹.

KEY ELEMENT 3. RESOURCE PARTICIPATION CRITERIA:

Senate Bill 3 was explicit in defining that a Reliability Service targeted to “*ensure appropriate reliability during extreme heat and extreme cold weather conditions and times of low non-dispatchable power production in the power region*” must be “*dispatchable and able to meet continuous operating requirements for the season in which the service is procured.*”¹⁰

In light of the clear directives of Senate Bill 3, it is not appropriate or consistent with the statute, to extend participation in this reliability service to non-dispatchable resources that cannot meet the prerequisites for performance, or to resources that cannot meet the continuous operating requirement. While battery energy storage resources provide valuable services to enhance the reliability of the system, they cannot meet the continuous operating requirement defined in Senate Bill 3. Only resources that meet the criteria would be eligible for qualification to provide the Reliability Service. As evidenced by Winter Storm Uri, continuous operating needs extend far beyond a handful of hours, and the wisdom of the Legislature and the Governor were apparent in ensuring that participation in a Reliability Service designed to meet the Summer, Winter, and net load challenges be exclusively geared towards resources that are able to meet the continuous operating need.

STEC believes it is possible for resources to offer into this Reliability Service if they are not yet constructed or operational but will be available during the times required to provide the Reliability Service. This would have the effect of providing incentives for new generation. However, the failure of a resource to “show up” for the time period for which they are procured would be severely penalized.

KEY ELEMENT 4. PROCUREMENT METHODOLOGY:

A competitive process of procurement is an extraordinarily important component of this proposal and it must be accomplished in a transparent manner that allows for a liquid market to develop. These are hallmark conditions required under Senate Bill 3¹¹. As STEC envisions this Reliability Service, ERCOT would, as it does today for other services, serve as the central clearing house for procurement of the Reliability Service, similar to how ERCOT provides a corollary

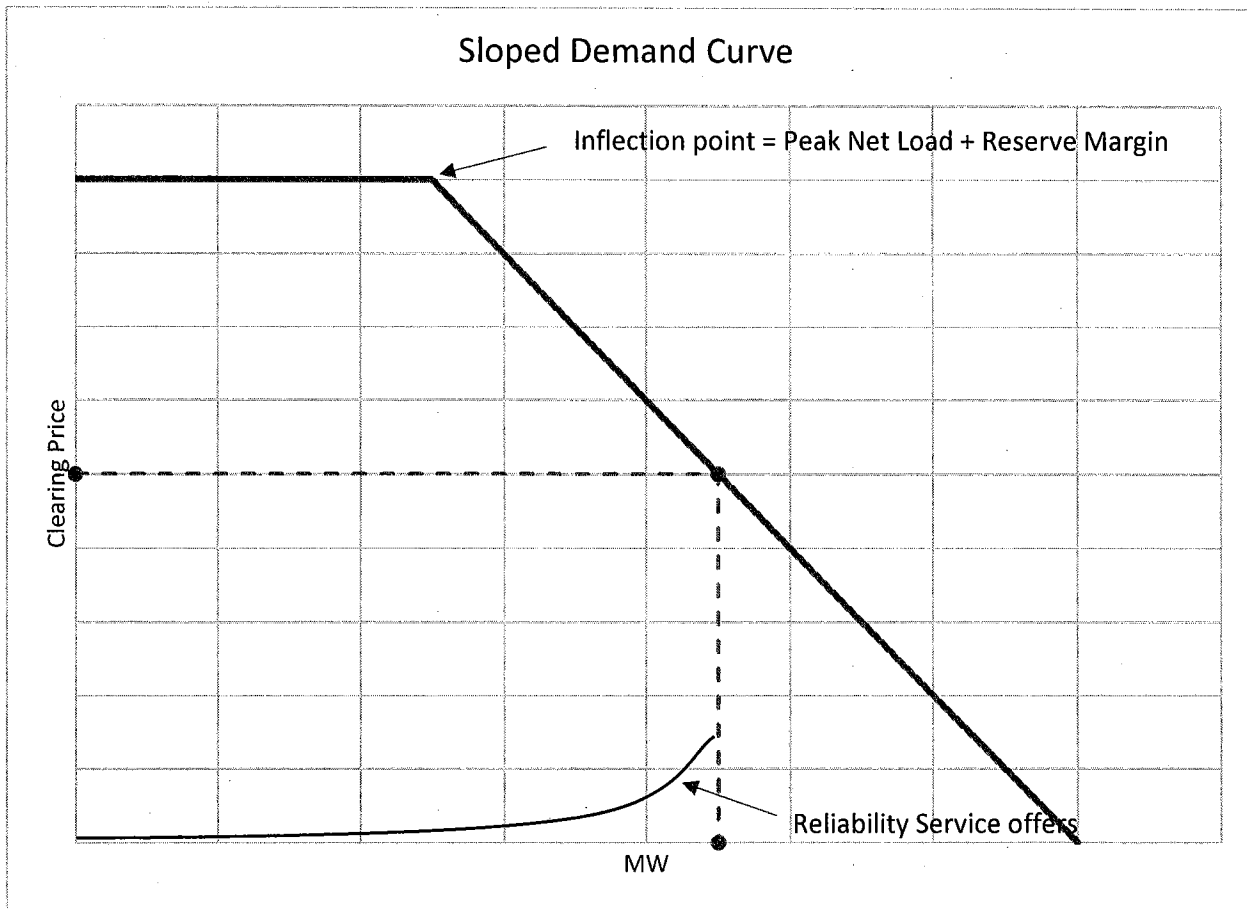
⁹ PURA § 39.159(b)(2).

¹⁰ PURA § 39.159(c)(1), and Governor’s Letter at p. 2.

¹¹ PURA § 39.159(b)(3).

function for energy and capacity from both generation and load through the Day Ahead Market and the Real-Time Market, and in its procurement of Emergency Response Service.

Procurement of this Reliability Service must be accomplished using a single market clearing price, which is recognized as the most efficient means to clear a market, as opposed to other mechanisms such as “pay-as-bid”. STEC proposes that this Reliability Service be cleared using a sloped demand curve, which is used in many other markets to clear capacity services. This allows for rational, transparent outcomes that can be monitored for manipulation by the Independent Market Monitor. Furthermore, depending on the construction of the sloped demand curve, it would allow for the procurement of additional reserves through the Reliability Service if the cost to do so is reasonable, and would serve to provide additional reliability to the ERCOT system. The illustration below demonstrates the general principles of a sloped demand curve, where offers exceed the minimum requirement (i.e., peak net demand forecast plus the reserve margin) and therefore establishes a lower overall clearing price while ensuring higher reliability for the ERCOT power region.



To the extent that the offers exceed the slope of the curve, the offers would truncate at the point at which the offers exceeded the curve. Offers exceeding the curve would not be awarded, and the price for the Reliability Service would be set at that intersection.

This procurement methodology, coupled with the narrow nature of the overall product to just those resources that meet the continuous operating and dispatchability requirements, not only ensures a higher degree of reliability, but also ensures that those that are paying the costs of the service are not paying for generation solely because it exists on the system.

KEY ELEMENT 5. COST ALLOCATION METHODOLOGY:

Senate Bill 3 includes provisions that costs be allocated on a basis that is consistent with cost-causation principles¹². STEC believes that this proposal provides a very straightforward path to achieving this objective, since the basis for procuring the Reliability Service is rooted in the need to ensure reliability at times of peak net load, and the procured quantities are directly tied to peak net load forecasts. The Reliability Service achieves that objective by allocating costs to those entities that contribute to the times of most system stress and the uncertainty that occurs as a consequence of the nature of non-dispatchable resources; more specifically, the costs are allocated based on an entity's contribution to the peak net load in any given month.

Costs incurred from the procurement of the Reliability Service for a given season would be collected on a monthly basis, with amounts equally split across the months within that season. Charges to market participants for a given month would be allocated to three categories of participants and their pro-rata contribution to the peak net load within the month. Those categories include load serving entities with metered load during the peak net load interval, non-dispatchable generation, and generation resources awarded to provide this Reliability Service, but that were unable to supply the generation in proportion to the award. Formulaically this is represented in the equation below:

Rate = monthly cost allocation / (metered load + non-dispatchable allocation + non-performing Reliability Service resources)

As it pertains to the allocation to non-dispatchable generation, STEC proposes that this be calculated as the difference between each non-dispatchable resource's P50 forecast (i.e., ERCOT's resource specific Short Term Wind Power Forecast) and its P10 forecast (i.e., ERCOT's resource specific Wind Generation Resource Production Potential forecast). STEC posits that this should be the forecast that ERCOT publishes six hours before the peak net load interval. This is a more moderate forecast than a P90 forecast which is essentially just below the standard a thermal generator would be expected to meet.

¹² PURA § 35.004(h) and Governor's Letter at pp. 1-2.

In addition to addressing the cost-causation requirement in Senate Bill 3, this proposal has other benefits that serve to provide economic incentives to reduce system stress and improve reliability. For loads, this provides an incentive to curtail their consumption through traditional curtailments or through the use of behind the meter energy storage. For non-dispatchable resources, it provides incentives to firm their capabilities at the time of peak net load, presumably through behind the meter energy storage or thermal resources. In the case of resources that were awarded to provide this Reliability Service, it provides an incentive to be available at the time of peak system stress. Lastly, it ensures that the costs are not borne solely by loads.

KEY ELEMENT 6. PERFORMANCE REQUIREMENTS AND PENALTIES:

STEC agrees with the Senate Bill 3 requirement that requires a Reliability Service to include appropriate penalties for failing to provide the service¹³. In addition to these penalties, STEC also believes it is imperative that resources receiving benefits from the service perform and perform well. Therefore, there must be high availability targets set for a generator to qualify to provide the service – resources with high forced outage rates should not be permitted to participate. In addition, in exchange for the compensation awarded to qualifying resources that provide the Reliability Service, the entities paying for the Reliability Service must be assured that they will receive the direct benefit of the Reliability Service. STEC believes this would be achieved by enforcing a must offer requirement for the participating, qualified resources such that the resource must offer in either the Day Ahead Market or the Real-Time Market. The only exception would be if the resource is on an ERCOT-approved planned outage.

Lastly, non-performing resources would be allocated a portion of the monthly cost allocation if they incur a forced outage at the time of peak net load during that month, or if they fail to meet their availability targets. This ensures that the revenues to Reliability Service resources do not become a guarantee of revenues but are clawed back to provide strong incentives to perform when the resource is most needed.

BENEFITS OF ADOPTING THIS RELIABILITY SERVICE:

In addition to the benefits stated above, there are numerous other benefits that should be considered as part of this proposal.

- The Reliability Service meets all of the reliability, dispatchability, and cost allocation requirements in Senate Bill 3 in one efficient mechanism, where cost allocation is addressed as part of the reform, as opposed to the current mechanisms and other proposals where customers are assumed to cover all of the costs.

¹³ PURA § 39.159(b)(4).

- The Reliability Service mitigates some of the effects of investment solely based on tax incentives that distort bidding behavior for non-dispatchable generation.
- The proposal leaves behind the crisis-based market design, while preserving ERCOT's competitive energy market with a bolt-on reliability service that enhances r valuation and cost allocation to support reliability across the market.
- The Reliability Service encourages and rewards firming of non-dispatchable resources consistent with cost-causation principles and consistent with the Governor's July 6, 2021 Directive and Section 14 of SB 3.
- The Reliability Service allows for lower offer-caps in exchange for steady revenue streams associated with the Reliability Service payments -- an insurance policy against reliability events instead of overall high prices that are dependent on the irregular and erratic price spikes that have not maintained existing dispatchable generation or resulted in significant new dispatchable generation.
- This Reliability Service is a continuing service that utilizes generation in the market, and encourages new generation, but does not hold generation out of the market.
- The Reliability Service is a more liquid, transparent, and accurate cost estimator than the proposals that require loads to carry obligations well in advance of the deployment period, recognizing that in a vibrant, competitive market, customers will move from provider to provider which may put the retailer with the carrying obligation for the load at a competitive disadvantage to another retailer that has not had to carry the reserve for that load.
- The cost of providing reliability is shared by a much broader class of market participants, will allow participants to pay for the amount of reliability that they want to contribute to the market, and will reward investments in firming of the resource mix.
- A centralized auction for the Reliability Service will reduce both the opportunity for gaming and the ability of market participants to abuse market power.
- This product reinforces an "all-of-the-above" solution for reliability by allowing all forms of thermal generation to participate in the market on a seasonal basis provided that the technical requirements are met and both generation and load can effectively participate by reducing their contribution to net peak load to mitigate their cost allocation (including firmed renewables and demand response).