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PROJECT NO. 52373

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

Texas Solar Power Association Comments

The Texas Solar Power Association ("TSPA") is a statewide industry trade association that promotes the development of solar electric generation. Our member companies invest in the development of solar photovoltaic products and projects in Texas, serving customers in both wholesale and retail markets, with products ranging from utility-scale generation, community solar and customer-sited solar and storage solutions.

Demand response is the essential tool to manage the electric grid efficiently and affordably during critical emergencies to prevent the need for rolling outages. In any planning horizon, there will always be situations where there is insufficient generation to meet demand. Standards such as "one in ten" or "market equilibrium" don't cover every contingency. Therefore, the Commission must encourage broad demand response solutions to be available to fill the gap on an emergency dispatch and economic dispatch basis. Because prices are highly correlated with emergency conditions, economic demand response serves a reliability purpose.

Demand response helps maximize the amount of customer-sited generation, storage, smart thermostats, smart plugs, and other controllable devices. These investments can help to mitigate the costs or simplify the deployment of demand response. Because the vast majority of residential consumers don't understand the inner workings of the ERCOT market, the Commission must make sure ERCOT processes to participate in demand response are simple and financially appealing to spur aggregation of residential demand response solutions. Additionally, by improving and expanding the demand response programs, ERCOT DR program requirements can produce additional transparency of participating resources to improve situational awareness in the control room.

More frequent reporting on DG interconnections and an explicit pathway for DERs to participate in economic demand response will give ERCOT greater awareness about what resources are available to operate.

Every home can make a difference in aggregate. These same demand response investments in residential resiliency can also provide solutions through multiple pathways. The Commission should also consider how these resources could be leveraged by third party aggregators so that on-site generation and storage can participate in the wholesale market as well as provide additional grid services to the local utility. These pathways should be explored in additional future work sessions.

Contact: Charlie Hemmeline, Executive Director at charlie@txsolarpower.org

1. **Describe existing and potential mechanisms for residential demand response in the ERCOT market.**

    a. **Are consumers being compensated (in cash, credit, rebates, etc.) for their demand response efforts in any existing programs today, and if not, what kind of program would establish the most reliable and responsive residential demand response?**

In Texas, the compensation from ERCOT and Retail Electric Provider (REP) programs has not been significant enough to drive enough participation in demand response by Texans. While there are programs that compensate consumers, many "voluntary curtailment" calls through the media or REP communications are uncompensated. In other markets, where DER participation draws from wholesale market structures, it is also generally insufficient to motivate the customer. First and foremost, creating tangible economic signals is necessary to spur participation. To increase participation, additional measures must be taken. For example, long-term program certainty and participation (such as 5-10 years) coupled with simplified and expeditated enrollment in aggregation services will motivate third party technology providers to provide and enroll residential demand response solutions.

Facilitating contracting through aggregators can provide greater demand response certainty, because third parties can coordinate and provide information about deployments to ERCOT, unlike individuals with their own behind-the-meter assets at the residential scale. Additionally, third party providers and aggregators would be able to be contractually required to perform based on agreed to conditions with ERCOT. This ensures demand response moves from a "hope" that customer participate and respond, to a transparent, reliable resource ERCOT operators can count on in times when it matters most. This situational awareness will improve reliability and control room operations. Third party ownership and aggregation models also enable more customers to access reliability solutions because business models will be created to do so. If these third parties are incentivized to manage risk in the wholesale market, they will be motivated to have high levels of asset performance.

    b. **Do existing market mechanisms (e.g., financial cost of procuring real time energy in periods of scarcity) provide adequate incentives for residential load serving entities to establish demand response programs? If not, what changes should the Commission consider?**

No, it needs to be easier to participate – price alone isn't sufficient for homeowners. Program design must financially reward customers directly for participating, and not just indirectly through market risk management, because residential customers are not active market participants. Simplifying participation and creating new pathways to participate focused on residential participation will substantially improve participation.

For example, the Commission should consider creating a Price Responsive Demand (PRD) program. Just as the Commission created a reliability-based program after the 2006 winter emergency called ERS, the Commission should now create an economic program that simplifies customer participation in economic programs. Generally, the Commission and ERCOT should not manage program design of economic demand response too closely, and instead create structures to encourage and rely on third party aggregators and retail electric

providers to come up with the best program design for their customers and allow competition to drive customer engagement.

A new PRD program that funds investments to make residential and other customers become price responsive would be prudent, encourage much more participation, and benefit grid operators. If ERCOT were to use a market or auction-based program to fund or partially fund onsite investments, it would reduce the risk for aggregation providers and therefore increase the total number of customers participating. Aggregators and retail electric providers could use this side payment to fund behind the meter assets and asset management programs, which would then be used to deploy demand response based on price. ERCOT's participation in this program would allow it to have more transparency and situational awareness of what demand response it could expect.

This service should be paid for in the same way ERS is – by LSEs being assigned a load ratio share of the costs. However, to allow LSEs to hedge this cost and build it into their contracts, the program should allow retail electric providers to self-provide this service and therefore avoid a cost assignment by ERCOT. This self-provision could be integrated directly into retail contracts and allow retailers that choose to participate to differentiate themselves based on their program design.

In addition to a new PRD program, the Commission could also consider finding a path to allow residential customers to respond to 4CP signals. Today, only large customers can participate in 4CP, which is the method the Commission uses to assign transmission costs. However, the State's investment in smart meters created the mechanisms for measuring customer response to 4CP. Transmission costs are substantial, and anything that customers can do to reduce peak load should be rewarded.

2. **What market design elements are required to ensure reliability of residential demand response programs?**
    a. **What command/control and reporting mechanisms need to be in place to ensure residential demand response is committed for the purpose of a current operating plan COP?)**

TSPA recommends aggregation for residential demand response for this very reason. Aggregators (whether third party or by the retail electric provider) can provide this information to ERCOT on a real-time basis. Additionally, aggregators or third party providers can be required to provide better insight and transparency into performance of load or generation behind the meter. Additional reporting on distributed generation installations would also be helpful. The Commission should update 16 TAC § 25.211(N) to require TDUs to report on distributed generation electronically at least quarterly, and to establish requirements for NOIEs to report on their distributed generation in the same format and at the same time.

    b. **Typically, how many days in advance can residential demand response commit to being available?**

At least one. Shorter response times can be built in, but will likely require greater compensation. More notice is often easier to manage customer expectations and performance, especially if looking to encourage residential participation in demand response.

3. **How should utilities' existing programs, such as those designed pursuant to 16 TAC §25.181, be modified to provide additional reliability benefits?**

    a. **What current impediments or obstacles prevent these programs from reaching their full potential?**

Stand-alone batteries and customer-sited solar plus storage should be included in program design, because they simplify demand response and energy savings for the customer. The rule should be modified to encourage these investments.

4. **Outside the programs contemplated in Question 3, what business models currently exist that provide residential demand response?**

Today, there are a few participating REP programs, and some participation in weather-sensitive ERS. But the solutions and participation is few and far between for reasons explained above.

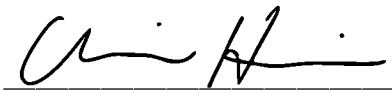
    a. **What impediments or obstacles exist in the current market design or rules that prevent these types of business models from increasing demand response and reliability?**

For ERS, baseline requirements can be difficult to manage or understand and should be simplified if possible. The current market design does not allow nor adequately compensate aggregated demand response. Creating a market design that allows third-party providers and aggregators to enroll, manage and aggregated DER solutions and exports improve market signals for investments and increase small customer adoption. Current market design does not contemplate the stacking of multiple solutions or programs. TSPA encourages the PUCT and ERCOT to create pathways where aggregated DERS can provide solutions including demand response, energy exports for wholesale market, and grid services for distribution utilities. It should be possible, and encouraged, to provide multiple market and grid services by serving multiple programs from a single aggregation, in the same way that one generator can provide multiple services at once.

5. **What changes could be made to non-residential load-side products, programs, or what programs should be developed to support reliability in the future?**

Allowing more customers to net behind the meter generation with their load for 4CP reduction would be an improvement. Many large customers are interested in this opportunity, but the strict rules at ERCOT can make this difficult. In addition, non-residential customers should also be allowed to participate in aggregations in new programs like price responsive demand (PRD), as described above in in Question 1.

Respectfully submitted,



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Texas Solar Power Association Executive Summary

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