COMMENTS OF
THE SOLAR ENERGY INDUSTRIES ASSOCIATION AND
THE TEXAS SOLAR POWER ASSOCIATION

COMES NOW, the Solar Energy Industries Association ("SEIA")\(^1\) and the Texas Solar Power Association ("TSPA") and jointly file these comments in response to Question 1 of the questions the Public Utility Commission of Texas ("Commission" or "PUCT") approved for publication at its Open Meeting on September 4, 2018.\(^2\)

SEIA is the national trade association of the solar energy industry. Through advocacy and education, SEIA and its members are building a strong solar industry to power America. As the voice of the industry, SEIA works to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy. SEIA represents solar companies across a variety of solar energy technologies, including photovoltaic ("PV"), solar water heating, and concentrating solar power ("CSP").

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. Our membership includes manufacturers, large-scale power plant developers, residential and

\(^1\) The comments contained in this filing represent the position of SEIA as an organization, but do not necessarily reflect the views of any particular member with respect to any issue.

\(^2\) 43 TexReg 6026 (Sept. 14, 2018).
commercial rooftop integrators, and other companies in Texas participating across the full solar photovoltaic supply chain.

BACKGROUND

On July 27, 2018, the Commission initiated this proceeding to analyze the performance of the ERCOT market during the past summer. While the Commission approved for publication a number of questions for comment with responses due no later than October 18, 2018, the Commission requested responses to Question 1 no later than September 14, 2018.

Based on ERCOT forecasts, utility scale solar is expected to be the largest contributor to new ERCOT capacity over the next 15 years. The “Current Trends” scenario in the upcoming Long Term System Assessment (“LTSA”) report currently forecasts that 14,400 MW of new utility solar generation will be installed in ERCOT over the next 10 years. These results, while still preliminary, are in line with ERCOT’s 2016 LTSA as well as other independent consulting analyses and project the installation of significantly more solar generation in the next 10-15 years than any other generation resource. While such analyses are not determinative, they demonstrate that PV is among the most cost competitive and best fit resources to meet ERCOT’s growing electric needs.

Question 1: Did the current scarcity pricing mechanism produce sufficient revenue during periods of resource scarcity to ensure long-term resource adequacy in the ERCOT region? If the current scarcity pricing mechanism did not produce sufficient revenue to ensure long-term resource adequacy, what specific modifications to that mechanism, within the context of an energy-only market, would improve the effectiveness of the scarcity pricing mechanism in ensuring long-term resource adequacy?


In the following comments, we respond to each sub-part of this question separately and briefly, providing more in-depth discussion of each issue following our brief answer.

**Did the current scarcity pricing mechanism produce sufficient revenue during periods of resource scarcity to ensure long-term resource adequacy in the ERCOT region?**

The current scarcity pricing mechanism did not produce sufficient revenue to ensure long-term resource adequacy in the ERCOT region. As discussed below, this can be observed by real market outcomes and ERCOT futures prices. This result can be attributed to several factors, including the inherent difficulty in using real-time conditions to signal longer-term market needs and the natural tendency of purchasers to not pay a premium now for future resources that may or may not be required.

The energy-only market construct asks investors to trust that the market (i.e., wholesale suppliers and purchasers) will return enough revenue to warrant their investment in the development of new generation in the future. As the past summer has demonstrated, if there is adequate generation to meet current operational needs, the price signals may not indicate that there is value in the development of new generation to meet future needs because immediate needs are being met. In other words, the market can and will be ruthless about the present and may not be forward looking regarding what additional supply resources will be needed in five or ten years.

This summer is a good example of that result. Heading into the summer of 2018, ERCOT’s April 30, 2018 Seasonal Assessment of Resource Adequacy (“SARA”) identified 5,428 MW of reserve capacity to meet a projected 72,756 MW of peak demand.⁵ This is the lowest level of

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⁵ Seasonal Assessment of Resource Adequacy for the ERCOT Region (SARA) Summer 2018, ERCOT (April 30, 2018) (available at http://www.ercot.com/news/releases/show/155101). At the same time, ERCOT released its Capacity, Demand, and Reserves (CDR) Report in which it forecast reserve margins for 2020-2023 dropping from 12.9% to 8.9%.
reserves identified in a SARA since the advent of ERCOT’s Seasonal Assessment of Resource Adequacy in 2013.\(^6\)

In the end, the summer was tighter than ERCOT had forecast, yet wholesale prices were not as high as might have been expected. ERCOT-wide real time energy prices averaged just $37.29 for June, $50.18 for July, and $39.49 for August.\(^7\) On July 19, 2018, ERCOT set a new all-time peak demand, 73,259 MW — more than 500 MW greater than its forecast at the end of April. The good news is that the system remained stable. The surprising news was that wholesale price continued not to show signs of significant scarcity. Were reserve resources tight? Yes, but there were adequate resources to meet real-time operational needs, and, as a result the scarcity pricing mechanism was not deployed at a level that would ensure adequate supply to meet demand over the long-term.

The relationship between real-time scarcity conditions and long-term resource adequacy is indirect at best. Resource adequacy — whether defined by the Planning Reserve Margin (“PRM”) or an Economically Optimal Reserve Margin (“EORM”) methodology — is satisfied when the revenue available to generators allows for efficient exit and entry while maintaining the identified resource adequacy metric. The situation ERCOT is currently facing, with reserves likely to remain below an identified resource adequacy threshold through at least 2023, indicates a need for new generation resources to ensure ERCOT maintains a level of reserves equal to or greater than the 10.2% economically optimal reserve margin as calculated by the Brattle Group in 2014,\(^8\) much less the traditional target reserve margin of 13.75%. However, the prospect that during a summer

\(^6\) The next lowest amount of reserves was in 2014, the year that the ORDC was first implemented: http://www.ercot.com/content/gridinfo/resource/2014/previous/SARA-FinalSummer2014.pdf


with record low reserves market returns may not even meet the level necessary to support investor
confidence that, in the long run, average market returns will meet or exceed the cost of new
investment in any particular technology is a clear signal to investors that the market as currently
structured does not support investment in new projects.

Despite real-time prices apparently not reflecting the tighter long-term resource adequacy,
ERCOT has benefitted substantially from the fact that some load serving entities and larger
customers take a longer view to the future. There are retail customers that are spending their
capital to ensure they receive energy from the resources that meet their needs over the long term,
including on site resources. These investments support long-term resource adequacy but aren’t
necessarily made for that purpose.

Customers who want energy generated from a particular type of resource or those who
desire a higher level of reliability will invest to achieve those results for themselves, however most
of the market, less concerned about the particulars of their electric service, will not. Most
customers are unwilling or unable to take the steps needed to meet system level resource adequacy
in their own hands, thus will not make investments to ensure adequate resources absent a market-
based mechanism that incorporates those needs.

In addition to a market that is ruthless in demanding efficiency, the ERCOT energy-only
market is undergoing a fundamental shift in what resources are expected to be deployed to meet
future energy demand. As noted above, ERCOT’s latest LTSA will project that the most cost-
effective generation resources ERCOT will see deployed are solar resources. According to its
most recent study underway, ERCOT is projecting an additional 14,400 MW of solar generation

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to be installed by 2028. Moreover, inverter-based technologies such as PV offer dispatchability and flexibility that enable grid operators to manage load and generation in real-time. Solar PV has demonstrated flexibility in its ability to deliver frequency regulation via automatic generation controls ("AGC") with greater precision at 90% accuracy, while a best-in-class gas-fired resource provides services with only approximately 60% accuracy. Paired with storage, utility-scale PV can provide a cost-competitive technology solution for firm, dispatchable capacity with the ability to supply both advanced grid reliability services and energy shifting to meet peak system needs.

In other words, the Commission’s traditional approach to evaluating whether wholesale market pricing will support the investment in a combined cycle natural gas generation facility does not reflect the new economics in the electric generation market. As a result, we recommend the Commission consider an approach that focuses on system needs rather than specific technologies when it comes to assessing whether market pricing will support the investment needed to ensure resource adequacy.

If the current scarcity pricing mechanism did not produce sufficient revenue to ensure long-term resource adequacy, what specific modifications to that mechanism, within the context of an energy-only market, would improve the effectiveness of the scarcity pricing mechanism in ensuring long-term resource adequacy?

ERCOT stakeholders, including SEIA and TSPA members, participated in a thorough investigation of potential modifications to the Operating Reserve Demand Curve ("ORDC") that should form the basis for approaches to improve scarcity pricing in ERCOT to support long-term resource adequacy. Recommendations that the Commission should consider include:

- Modifying the minimum contingency level (i.e. the value of “X”); and
• Modifying the shape of the LOLP curve through:
  
  o Creating a multiplier for the standard deviation (sigma);
  
  o Shifting the average (mu) by a multiple of the standard deviation (see Exelon & TCPA comments); or
  
  o Increasing the Value of Lost Load.

These proposals are not comprehensive but aim to support and broaden the discussion around maintaining resource adequacy in an energy-only market through the ORDC. This past summer has made it clear that, left as-is, the current market does not effectively reflect resource adequacy needs. The ORDC as currently implemented provides only infrequent and weak market signals identifying operating reserve scarcity. If the Commission wishes to support reserve margins at a level closer to an EORM of 10.2% or the traditional 13.75% target, we recommend the Commission consider revisions to the ORDC that reflect the objective to better align operational reliability price signals with long-term resource adequacy price signals.

CONCLUSION

SEIA and TSPA appreciate the opportunity to provide these comments and the Commission’s continued review of these critical issues in ERCOT. Given the clear need for additional investment to support resource adequacy in ERCOT over the long term, we believe that this issue should be considered carefully and prioritized over other proposals affecting price formation considered in Project No. 47199 and related proceedings that do not address this need. SEIA and TSPA look forward to working with the Commission and other stakeholders on the issue of resource adequacy, other issues in this proceeding, and the Commission’s broader effort to continually improve the ERCOT market.
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