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REVIEW OF REAL-TIME
CO-OPTIMIZATION IN THE
ERCOT MARKET

§ PUBLIC UTILITY COMMISSION
§ FILING CLERK
§ OF TEXAS

TEXAS INDUSTRIAL ENERGY CONSUMERS' REPLY COMMENTS

I. INTRODUCTION

The Commission's decision to adopt real-time co-optimization (RTC) was based on improved market efficiencies and production cost savings that were projected to outweigh the implementation costs. TIEC has generally supported RTC based on this premise, and believes it could provide material benefits to customers and the market as a whole. However, many of the initial comments essentially ask the Commission to make price adjustments or other market design changes to offset any efficiencies that are the reason for adopting RTC. This approach would completely undermine the purpose of implementing RTC. TIEC urges the Commission to design RTC based on sound economic principles, and not with the end goal of maintaining a pre-determined level of market revenues for existing resources or an administratively mandated level of reserves.

As anticipated, the initial comments reveal a number of issues where stakeholders would benefit from further discussions. In many instances, it appears that commenters interpreted the Commission's questions differently and have different assumptions about RTC's mechanics. Additional discussions at ERCOT and the Commission will help to provide clarity on these issues and inform stakeholders' positions as this project moves forward. TIEC will respond to specific comments below.

II. REPLIES TO INITIAL COMMENTS

1. **RTC should not be designed to target an end-result reserve margin.**

Several stakeholders ask the Commission to make RTC design decisions with the objective of ensuring a pre-determined market equilibrium reserve margin (MERM). These parties suggest that RTC should "result[] in no worse an outcome from a resource adequacy

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standpoint than the current projected reserve margin of 11%,”¹ or that the Commission should conduct a study of RTC implementation to ensure that it will produce an 11% MERM. This approach should be rejected.

First, MERM projections are just that—speculative projections of future outcomes, based on a wide array of economic assumptions, including what it costs to build new greenfield resources based on existing technology. These assumptions involve significant judgment, may be inaccurate, and will certainly change over time.² The MERM projections previously developed for the Commission were not meant to be used as an end goal, and have never been appropriately vetted for that purpose. Therefore, while MERM projections can serve as a useful data point, they should not be elevated to a mandatory goal in making market design changes. The Commission has previously declined to adopt a mandatory reserve margin, and it should not treat MERM projections as a substitute for such a mandate. This would be nothing more than a backdoor approach to a capacity market.

Second, as noted above, this approach to designing RTC would eliminate its potential benefits, raising the question of whether it makes sense for the market to take on the implementation risk and associated costs of moving forward with RTC. ERCOT has estimated that the cost of RTC implementation would be approximately \$40 million.³ TIEC urges the Commission to ensure that the benefits to customers outweigh the implementation costs by designing RTC based on first principles, and allowing the market to realize the savings that RTC is meant to provide.

¹ See Lower Colorado River Authority Initial Comments at 1 (LCRA Initial Comments); See also Texas Competitive Power Advocates Initial Comments at 3-4 (TCPA Initial Comments); The Solar Energy Industries Association (SEIA) and Texas Solar Power Association (TSPA) Initial Comments at 5-6 (SEIA/TSPA Initial Comments); Texas Electric Cooperatives, Inc. Initial Comments at 2-3 (TEC Initial Comments).

² TIEC has explained in many sets of prior comments that the Cost of New Entry (CONE) numbers used by Brattle and others for reserve margin studies are an outdated, blunt-tool instrument that likely underestimate the equilibrium reserve levels. In addition, these studies assume a static level of demand response, which has a significant impact on the reserve margin calculations. These are just a few of the inherent limitations in any economic study of future market outcomes. See e.g. *Rulemaking Proceeding to Amend 16 TAC 25.505, Relating to Resource Adequacy in the Electric Reliability Council of Texas Power Region and to Repeal 16 TAC 25.508, Relating to the High-System-Wide Offer Cap in the Electric Reliability Council of Texas Power Region*, Proj. No. 48721, TIEC Reply Comments at 2-3 (Feb. 25, 2019).

³ Potomac Economics (IMM), *Simulation of Real-Time Co-Optimization of Energy and Ancillary Services for Operating Year 2017* at 6 (June 29, 2018).

2. **A “must-offer” requirement for ancillary services is contrary to a voluntary energy-only market.**

TIEC generally agrees with commenters who noted that a must-offer requirement is inconsistent with a voluntary, energy-only market and should not be required as a part of RTC.⁴ While TIEC acknowledges that the benefits of RTC will be maximized if there are abundant ancillary service offers, resources will generally have an incentive to submit ancillary service offers for any available capacity, and will not withhold capacity unless they are exercising market power. TIEC believes that the Independent Market Monitor (IMM) can monitor withholding just as it does today, without the need for a general must-offer requirement. Additionally, as TCPA notes, there may be legitimate reasons why a resource may not want to submit an ancillary service offer.⁵ As with the exercise of market power generally, the IMM is well-suited to ensure that resource commitment and offer decisions are being made for appropriate reasons and not to raise prices for a generator’s other units.

However, TIEC also agrees with the IMM that SCED should have access to the full capacity of online resources, as it does today.⁶ Currently, incomplete offer curves are extended from the last point on the resource’s submitted offer curve to cover any remaining capacity. For online resources that are qualified to provide ancillary services, the same practice should be used under RTC to ensure that the unit’s full capacity is available to SCED for *either* energy or ancillary services. While not a must-offer requirement (because the resource has already been offered to the market), this current practice for online resources should be continued under RTC. TIEC also agrees with the IMM that if an online resource is unable to offer its remaining “headroom” for ancillary services, it should be able to submit an outage or status change to reflect the limitation.⁷ This approach would be consistent with the current market design.

⁴ See e.g., South Texas Electric Cooperative, Inc.’s Initial Comments at 8-9 (“A ‘must-offer’ requirement is only appropriate in a capacity market.”) (STEC Initial Comments); SEIA/TSPA Initial Comments at 8; LCRA Initial Comments at 2.

⁵ TCPA Initial Comments at 12.

⁶ Potomac Economics Initial Comments at 6.

⁷ *Id.*

3. Day-Ahead Market (DAM) Ancillary Service Awards should remain physically binding for at least the initial implementation of RTC.

After reading other parties' comments, TIEC believes that the issue of purely financial ancillary service offers in the DAM is an area where further stakeholder discussion would be beneficial. While TIEC recognizes that the DAM is financial today, ancillary service awards in the DAM are resource-specific, and ERCOT takes certain steps to ensure that the amount of ancillary services procured in the DAM will be physically provided by the Qualified Scheduling Entities (QSEs) representing the awarded resources. It is unclear from the initial comments how, specifically, this would change in an environment where there are purely financial ancillary service offers in the DAM and what risks that would create for reliability. TIEC continues to believe that the Commission should not make this change on initial implementation, but would support continued discussion.

Requiring ancillary service awards in the DAM to be physically binding provides greater assurance that the necessary capacity will be online and available in real-time *as a starting point*. In the real time market, ancillary service awards can then be shifted to lower-cost resources to reduce overall costs, and resources who are no longer providing a service would pay an imbalance payment. The benefit of purely financial ancillary service offers in the DAM would be potentially lower ancillary service clearing prices in the DAM relative to today. However, TIEC continues to believe that the need to have sufficient ancillary service capacity physically committed outweighs these potential savings *until* ERCOT and the market have gained more experience with RTC and are comfortable that sufficient ancillary service quantities will be available in real-time. TIEC is open to further discussion on this issue, but currently believes that the Commission should make as few changes to the DAM as possible for initial RTC implementation.

4. The “small fish swim free” rule should be maintained for the real-time energy market.

Several stakeholders and the IMM suggest that the Commission eliminate the “small fish swim free” rule since scarcity pricing will be provided primarily through the ancillary service demand curves in RTC. While TIEC understands this point, scarcity pricing will depend on *both* the ancillary service demand curves and the actual submitted energy offers of market resources.

As noted in TIEC's initial comments, unless there are sufficient resource offers at the SWOC, the combination of the marginal energy offer and the demand curves may not approach the Value of Lost Load (VOLL).⁸ As a result, TIEC believes it is beneficial to still allow resources who do not have market power to submit offers that are above their marginal cost to achieve a greater likelihood of prices being at VOLL during scarcity.

TIEC agrees, however, that if the small fish rule is maintained, the Commission should clarify that it only applies to the real-time energy market as it does today.⁹

5. Appropriate levels for the SWOC and the Low-System Wide Offer Cap (LCAP).

Consistent with TIEC's position, the majority of commenters appear to support a SWOC of \$2,000/MWh and a maximum ancillary service demand curve price of \$7,000/MWh, with the current \$9,000/MWh VOLL.¹⁰ TCPA expressed some interest in a construct that would retain the current VOLL but allow prices to exceed VOLL in certain scenarios.¹¹ TIEC opposes this concept for two reasons. First, and fundamentally, VOLL represents the maximum amount that customers are willing to pay for electricity, so prices should not exceed VOLL as a matter of economic principle. Second, TCPA acknowledges that this scenario would cause unhedgeable uplift for customers.¹² The Commission should strongly disfavor market features that cause unhedgeable uplift for customers, as this does not promote forward contracting or resource adequacy and is effectively an unavoidable tax on electricity.

TCPA also observed that if the SWOC is reduced to \$2,000/MWh under RTC, the current \$2,000/MWh LCAP may not be needed any longer.¹³ As TIEC has expressed in previous comments, the current LCAP is not a meaningful protection for consumers and TIEC is not

⁸ See TIEC Initial Comments at 2-3.

⁹ See Potomac Economics Initial Comments at 7.

¹⁰ See e.g., Joint Retail Electric Provider (REP) Group Initial Comments at 1-2 (Joint REP Initial Comments); STEC Initial Comments at 2-3.

¹¹ TCPA Initial Comments at 6.

¹² *Id.*

¹³ *Id.* at 7.

wedded to maintaining it.¹⁴ However, TIEC's understanding is that separate ancillary service demand curves and SWOCs are necessary to ensure proper co-optimization of energy and ancillary services. The Commission recently discussed retaining the Operating Reserve Demand Curve (ORDC) once the LCAP is triggered, but resetting VOLL to the LCAP. This would not work under RTC because the ancillary service demand curves are not based on "VOLL minus system lambda" like the ORDC. Instead, prices are effectively the sum of system lambda and the ancillary service demand curves. As a result, the Commission would still need to establish separate parameters for the LCAP and the maximum price on the ancillary service demand curves. As a preliminary recommendation, TIEC would suggest an LCAP of \$1,000/MWh and a maximum point on the ancillary service demand curves of \$2,000/MWh. However, TIEC is open to further discussions on this issue.

6. Other Proposals

TIEC opposes several other proposals raised in initial comments that are only tangentially related to RTC.

First, TIEC disagrees with the Advanced Energy Management Alliance's (AEMA's) suggestion that the Commission should reconsider adopting multi-interval real time markets (MIRTM) and loads in SCED as part of the RTC discussion.¹⁵ Those proposals have been extensively debated at ERCOT and the Commission and have not been implemented for a host of reasons that are still relevant today.¹⁶ In particular, MIRTM would implement binding projected prices, which creates a risk of substantial unhedgeable uplift for consumers if ERCOT's short-term load forecast is inaccurate. Previous studies indicated that MIRTM does not make economic sense based on the observed accuracy of short-term load forecasts, and TIEC does not

¹⁴See Proj. No. 48721, TIEC Initial Comments at 2-3 (Feb. 11, 2019).

¹⁵ Texas Chapter of the Advanced Energy Management Alliance, Initial Comments at 5-7 (AEMA-Texas Initial Comments).

¹⁶ See e.g. *PUCT Review of Real-Time Co-Optimization in the ERCOT market*, Project No. 41837, ERCOT's Report on the Multi-Interval Real-Time Market Flexibility Study at 4 (Apr. 6, 2017) ("ERCOT and stakeholders find that the MIRTM study demonstrates that the estimated cost are in excess of the measured benefits and therefore insufficient to support a recommendation to move forward with MIRTM at this time."). The Commission accepted ERCOT's recommendation in April 2017.

believe this has changed.¹⁷ Similarly, Loads in SCED entails controversial issues about how demand response resources are compensated, and stakeholders have been unable to resolve these issues without making uneconomic payments to demand response providers.¹⁸ While TIEC does not oppose reexamining these issues in the future, the Commission should avoid adding more complexity to RTC implementation with these controversial initiatives.

Second, TIEC strongly disagrees with proposals that are aimed at offsetting the cost savings of RTC by layering new artificial price adjustments into the market design. TCPA suggests that there should be additional artificial price adjustments for a wide variety of market phenomena.¹⁹ These are the same proposals that have been repeatedly considered and rejected at both ERCOT and the Commission, and there is no legitimate reason to reexamine these issues here. Over the years, the Commission has set VOLL and the MCL at higher levels in recognition of these types of arguments, while declining to make any specific price adjustments. TIEC believes that these proposals are improper and ill-conceived for distinct reasons. As such, if the Commission wishes to consider them again, TIEC recommends taking additional stakeholder comments on specific proposals *in a separate forum*, and not as part of the already complex process of designing RTC.

As just one example, TCPA once again proposes to artificially increase prices when customers curtail to manage their transmission costs during the four coincident peaks (4CPs).²⁰ This proposal is both flawed and unjustified, and should be rejected as it has been in the past. Customers have a right to curtail their usage for a number of reasons that are completely unrelated to real-time electricity prices and the Commission should not attempt to counteract customers' efforts to operate efficiently or manage their overall costs by imposing artificial price increases. Just as customers may reduce usage to avoid properly allocated transmission charges, they may also reduce usage based on a drop in demand for their product, an increase in feedstock

¹⁷ *See id.*

¹⁸ *See Rulemaking Regarding Demand Response in the Electric Reliability Council of Texas (ERCOT) Market*, Proj. No. 41061, ERCOT's Comments at 4-5 (Feb. 15, 2013); *See also* Proj. No. 41061, ERCOT Comments at Table 1 (Jan 19, 2018) (listing meetings/papers at ERCOT on compensation for "loads in SCED" ranging from 2010-2017).

¹⁹ TCPA Initial Comments at 16.

²⁰ *Id.*

costs, or any number of external factor that impact their operations. These factors are substantively no different than managing regulated transmission costs. The Commission should not be in the business of attempting to adjust electricity prices for any and all external factors that cause a reduction in customer demand. Moreover, attempting to increase prices based on 4CP curtailments would be exceedingly difficult, as it would be nearly impossible to accurately quantify the specific demand response attributable to the 4CP versus any other factors that might cause reduced demand. Moreover, as TIEC has previously explained, demand response during the 4CP periods is unlikely to have any material impact on energy prices. If this response occurs when the market is not otherwise in scarcity, then prices will be moderate and impacts to generator revenues will be minimal. If the 4CP coincides with scarcity conditions, then the vast majority of these flexible loads would curtail *regardless of the 4CP* to avoid high prices, so generators would not have served that load in any event. As a result, it is highly questionable that this demand response activity has any real impact on generator revenues. Again, if the Commission wishes to consider additional price adjustments of this nature, TIEC would respectfully request an opportunity to provide more tailored comments in a separate forum, separate and apart from the already complex RTC implementation process.

III. CONCLUSION

TIEC appreciates the opportunity to provide these comments and looks forward to continuing to work with Commission Staff and other parties as this project moves forward.

Respectfully submitted,

THOMPSON & KNIGHT LLP

A handwritten signature in black ink, appearing to read "Katherine Coleman", written over a horizontal line.

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