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Received - 2022-02-15 04:17:05 PM Control Number - 52373 ItemNumber - 340

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February 15, 2022

Public Utility Commission of Texas Chairman Peter Lake Commissioner Will McAdams Commissioner Lori Cobos Commissioner Jimmy Glotfelty 1701 N. Congress Ave. Austin, Texas 78711

Re: PUCT Project No. 52373, Review of Wholesale Electric Market Design

Dear Chairman and Commissioners:

Pursuant to Public Utility Commission of Texas (PUCT) instruction at the December 16, 2021, Open Meeting, Electric Reliability Council of Texas, Inc. (ERCOT) provides the following information regarding needed specifications and decision points for the design of the load-side reliability mechanisms identified as Phase II items in the PUCT's market design blueprint.

As described in the PUCT's blueprint, the goal of a load-side reliability mechanism is to provide economic incentive to ensure there is sufficient dispatchable supply to meet system demand within ERCOT. This would be accomplished through some manner of requirement on Load Serving Entities (LSEs) in the ERCOT market design. In the case of an LSE Obligation program, this would come in the form of an obligation on the LSE to contract with accredited grid resources to cover some proportion of their expected demand.

In the case of a Dispatchable Energy Credit (DEC) program, the form would be a requirement for LSEs to purchase DECs and clear or retire those DECs through arrangements with eligible grid resources.

Key elements of a load-side reliability mechanism with questions to the PUCT

The following are key design elements and their associated questions that are critical for the development of the proposed load-side reliability mechanisms or a similar program. Included in the list is information regarding which ERCOT systems may be impacted by the PUCT's decisions on the questions laid out below. While there are some similar questions for both of the proposed mechanisms, an LSE Obligation program and a DEC program are discussed separately.

An LSE Obligation program

For purposes of laying out the design elements and questions below, ERCOT staff assumed the LSE Obligation program would have fundamental features generally in alignment with programs proposed by various commenters in PUCT Project No. 52373. These elements are (1) a defined reliability standard for the ERCOT system, (2) the actions required by the LSEs necessary to meet that reliability standard, (3) accreditation of grid resources to determine their eligibility for



participation in the program, (4) performance monitoring and penalties for LSEs not meeting the requirements of the program, and (5) performance monitoring and penalties for participating grid resources.

Reliability standard

- The reliability standard will be the primary input for determining the LSE requirements and will drive the size of the program and requirements placed on LSEs.
- The questions for the PUCT to consider are:
 - What metric(s) will be used to assess the reliability of the ERCOT system? Various comments submitted in PUCT Project 52373 have raised several examples of metrics that may be used, and many of these align with reliability metrics used in ERCOT's planning reserve margin studies. These include a statistical evaluation of potential Loss-of-Load Events (LOLE), Loss-of-Load Hours (LOLH), and Expected Unserved Energy (EUE). There may also be deterministic approaches for defining and evaluating reliability expectations that the PUCT wishes to pursue.
 - What is the reliability level or objective that the program is intended to achieve relative to those metrics?
- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically: that the sizing of the program should be dynamic, that the program should be proportional to system needs, and that the program should be self-correcting.
- Decisions regarding this design element are largely expected to impact ERCOT business processes for performing the necessary reliability assessments and are expected to have a limited impact on ERCOT's core systems, which include settlements and billing, credit, transmission network model, energy management, and market management systems along with their associated interfaces. The focus for performing these assessments would be having the necessary tools and staff. There would also be new market-facing reports created to communicate the results of the reliability assessments.

Action required by the LSE to meet the defined reliability standard

- With the reliability standard understood, the next focus would be determining what this means in terms of specific requirements for the LSE. This would include the overall structure of any associated LSE showings or auctions, such as: forward timeframe, frequency of actions taken by the LSE or other market participants, such as LSE showings, and any processes needed to mitigate the potential exercise of market power. An LSE showing would be a point in time in which the LSE is evaluated on whether they have met the requirements of the program.
- The questions for the PUCT to consider are:
 - How far in advance would the requirement for LSEs be evaluated and communicated and how frequently would this requirement be assessed? For example, the requirement for LSEs could be identified a year or more in advance and reevaluated closer to the delivery period.

- For associated LSE showings or auctions, what would the forward timeframe be for the requirement on the LSE? For example, one proposal included a showing by LSEs on a year-ahead forward basis.
- How frequently would LSE showings or auctions occur and what would the timeframe for the delivery period be? For example, these could be on annual or seasonal basis.
- What market power mitigation processes should be included in the program?
- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically: that the program be compatible with ERCOT's competitive retail electricity market, ensure that market power concerns are mitigated, build on existing frameworks within ERCOT, such as the Renewable Energy Credit (REC) program, and provide a forward price signal to encourage investment in dispatchable generation resources.
- Decisions regarding this design element would impact ERCOT business processes and the development of systems, including new systems that will be needed to track arrangements made between LSEs and grid resource representatives or needed to perform auctions. New market-facing reports would be created to communicate to both individual market participants and the public. There would also be some impact to how core ERCOT systems would be designed, such as the data required by settlement and billing systems to assess performance penalties and determine individual LSE requirements.

Grid resource eligibility for participation in the program

- As part of the LSE Obligation program, there will need to be an understanding of which grid resources will be eligible for participation and, for resources that are eligible, the level of accreditation.
- The questions for the PUCT to consider are:
 - Which grid resources are eligible to participate and how will ERCOT determine the level of accreditation? Should historical performance of the resource feed into the eligibility assessment? For example, commenters on PUCT Project No. 52373 referenced current approaches taken by ERCOT in evaluating planning reserve margins and noted that an Effective Load Carrying Capability (ELCC) metric is currently used or planned for use by other U.S. Independent Systems Operators (ISOs).
 - What would be the granularity of the accreditation? For example, would the level of accreditation vary seasonally?
 - Would the accreditation process take into consideration deliverability of the resource's supply over the transmission system to load?
 - How would demand response participate in the program, if at all? For example, would demand response be accredited as a resource or would demand response be used directly by LSEs to effectively self-supply and mitigate their obligations within the program?

- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically: that the program provide a forward price signal to encourage investment in dispatchable generation resources, value or qualify resources based on capability, and be self-correcting.
- Decisions regarding this design element are largely expected to impact ERCOT business processes for performing the necessary qualifications or accreditations and would likely have a limited impact on the complexity of implementing changes to ERCOT's core systems. The focus for performing these functions would be having the necessary tools and staff. There would also be new market-facing reports created to communicate the results of the accreditation process.

Performance monitoring and penalties for LSEs not meeting the requirements of the program

- Systems to monitor performance and assess penalties to LSEs who do not meet the requirements of the program will need to be put into place.
- The questions for the PUCT to consider are:
 - How should the size of monetary penalties be determined? For example, the size of the penalty could be a function of a pre-determined cost of new entry for a new generator. This idea was included in the PUCT's blueprint, as well as other filings in the project.
 - How should collected penalties be allocated by ERCOT? For example, there was a proposal that collected funds be used by ERCOT to contract with grid resources to fill any deficiencies left by any LSEs not meeting their requirements. Whether or not that proposal was adopted, there may still be additional dollars that would need be allocated.
 - Should a process be put in place for ERCOT to attempt to fill deficiencies left by any LSEs not meeting their requirements? If so, what would that process look like?
- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically that the program offer economic rewards and provide robust penalties.
- Decisions regarding this design element are expected to play a more significant role in the overall complexity of the design of ERCOT's core systems, specifically settlements and billing and credit systems, and, therefore, could have a more significant impact on implementation timelines. This is particularly true for the questions above related to the processes for assessing and allocating penalties or addressing LSE deficiencies, as opposed to the question regarding the size of penalties. New market-facing reporting would also be needed for communicating performance.

Performance monitoring and penalties for participating grid resources

- Similar to what was discussed for LSE performance, systems to monitor performance and assess penalties to grid resources who do not meet the requirements of the program will need to be put into place.
- The questions for the PUCT to consider are:
 - How will grid resource performance be assessed? Does performance include any requirements on how the resource is offered into the ERCOT energy and ancillary service markets, such as the "much offer" constructs utilized by other U.S. ISOs?
 - How should the size of monetary penalties be determined? Again, as an example, the size of the penalty could be a function of a pre-determined cost of new entry for a new generator.
 - How should collected penalties be allocated by ERCOT? For example, collected funds could be used to reward any resources that overperformed, relative their obligation. Under that type of concept, there may be additional dollars that would need to be allocated.
 - Is the penalty only financial or would non-performance result in reduced levels of accreditation or disqualification for future years?
- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically: that the program offer economic rewards and provide robust penalties, have clear performance standards, and establish standards that can be regularly tested or certified.
- Like the decision regarding LSE performance, decisions regarding this design element are expected to play a significant role in the complexity of the design of ERCOT's core systems and implementation timelines. Again, this is particularly true for the questions above related to the processes for assessing and allocating penalties, as opposed to the question regarding the size of the penalties. In addition to settlements and billing and credit systems, grid resource performance monitoring is expected to involve ERCOT's energy and market management systems. These systems would be required for collecting real-time information necessary to evaluate grid resource performance, such as status and operating levels. New market-facing reporting would also be needed for communicating performance. Based on the system changes described, ERCOT preliminarily estimates a delivery of an LSE obligation no sooner than three years in the future.

A Dispatchable Energy Credits (DEC) program

For purposes of laying out the design elements and questions below, ERCOT staff assumed the DEC program would have the fundamental features generally in alignment with program proposed in Commissioner McAdams' memo on November 17. 2021. These elements are (1) the program size, (2) the actions required by the LSEs to meet their assigned DEC requirements, (3) qualification of grid resources to determine their eligibility for participation in the program and the number of awarded credits, and (4) performance monitoring and penalties or alternative compliance for LSEs.

Program size

- The overall size of the program will be the primary input for determining the individual LSE requirements.
- The questions for the PUCT to consider are:
 - What metric(s) will be used to assess the reliability needs of the systems and determine a program size that meets the PUCT's reliability objectives? For example, Commissioner McAdams' memo on November 17, 2021, proposed that an annual target could be based on expected increases in demand for the region.
 - What would be the specific process for allotting those system-wide amounts to LSEs?
- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically: that the sizing of the program should be dynamic, that the program should be proportional to system needs, and that the program should be self-correcting.
- Decisions regarding this design element are largely expected to impact ERCOT business processes for performing the necessary reliability assessments and would likely have a limited impact on ERCOT's core systems. The focus for performing these assessments would be having the necessary tools and staff, depending on the complexity of the analysis. There would also be new market-facing reports created to communicate the results of any analysis and the system-wide program amounts.

Action required by LSEs to meet their DEC requirements

- With the program size understood, the next focus would be determining what this means in terms of requirements for the LSE. This would include the overall structure of any associated LSE showings or auctions, such as: forward timeframe and frequency of actions taken by the LSE or other market participants, such as LSE showings. As with an LSE Obligation program, an LSE showing is a point in time in which the LSE is evaluated on whether they have met the requirements of the program.
- The questions for the PUCT to consider are:
 - How far in advance would the requirement for LSEs be evaluated and communicated and would this requirement be evaluated more than once? For example, the requirement for LSEs could be identified a year or multiple years in advance and reevaluated closer to the delivery period. An LSE's share of the total requirement could also simply be evaluated after the fact.
 - Would ERCOT perform centralized auctions to allow the transfer of credits between market participants or would ERCOT solely provide a platform for facilitating trades of credits that are occurring bilaterally?
 - How frequently would LSE showings or auctions occur and what would the timeframe for the delivery period be? For example, LSE requirements could be evaluated on an annual or seasonal basis.

- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically: that the program be compatible with ERCOT's competitive retail electricity market, build on existing frameworks with ERCOT, such as the Renewable Energy Credit (REC) program, and provide a forward price signal to encourage investment in dispatchable generation resources.
- Decisions regarding this design element would impact ERCOT processes and the development of systems, including new systems that will be needed to track the trading of credits between LSEs and grid resource representatives or needed to perform auctions. New market-facing reports would be created to communicate to both individual market participants and the public. There would also be some impact to how core ERCOT systems are designed, such as the data required by settlement and billing systems to assess performance and determine individual LSE requirements.

Grid resource eligibility for participation in the program and awarding of DECs

- As part of the DEC program, there will need to be an understanding of which grid resources will be eligible for participation and, for resources that are eligible, the process for determining the amount credits that the resource will awarded.
- The questions for the PUCT to consider are:
 - Which grid resources are eligible to participate in the program? For example, Commissioner McAdams, in his memo filed on November 17, 2021, discussed an approach that would take into consideration grid resource attributes, such as a generator's heat rate and its ability to start up and ramp to a full nameplate capacity within a specified amount of time. The memo also raised the idea of consideration of duration for participating batteries.
 - At what frequency would credits be awarded to participating resources? For example, credits could be awarded on annual or seasonal basis or at some other frequency.
 - What would be required of a participating resource to earn credits? For example, would it solely be a function of MWh production in the real-time market, or would the process consider other factors, such as the provision of ancillary services by the resource?
- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically: that the program provide a forward price signal to encourage investment in dispatch generation resources, value or qualify resources based on capability or performance, have clear performance standards, establish standards that can be regularly tested or certified, and be self-correcting.
- Decisions regarding this design element are expected to impact ERCOT business processes for evaluating the qualification of resources. There would also be some impact to how core ERCOT systems are designed, such as the data required by settlement and billing, energy management and market management systems to determine the number of credits to award

participating resources. New market-facing reports would be created to communicate to both individual market participants and the public.

Performance monitoring and penalties or alternative compliance measure for LSEs

- Systems to monitor performance and assess penalties or alternative compliance measures to LSEs will need to be put into place.
- The questions for the PUCT to consider are:
 - How would alternative compliance measures be applied to LSEs and how would the cost of those compliance measures be determined? Commissioner McAdams' November 17, 2021, memo proposed the concept of an Alternative Compliance Payment (ACP) that could be imposed on the LSEs that were short on their DEC obligation.
 - How should dollars collected by ERCOT be allocated? For example, Commissioner McAdams' November 17, 2021, memo proposed the concept of applying collected funds to reduce ancillary service costs.
 - Should a process be put in place for ERCOT to attempt to fill deficiencies left by any LSEs not meeting their obligations or would the LSE just be charged through an alternative compliance measure? If ERCOT did attempt to fill deficiencies, what would that process look like?
- These questions relate to load-side reliability mechanism principles laid out in the PUCT's blueprint, specifically that the program offer economic rewards and provide alternative compliance payments.
- Decisions regarding this design element are expected to play a more significant role in the overall complexity of the design of ERCOT's core systems, specifically settlements and billing and credit systems, and, therefore, could have a more significant impact on implementation timelines. This is particularly true for the questions above related to the processes for assessing and allocating dollars or addressing LSE deficiencies, as opposed to the question regarding the size of penalties or other measures. New market-facing reporting would also be needed for communicating performance. If this program is determined to have energy management system changes, delivery would most likely be sometime beyond 2024.

ERCOT thanks the Commission for its consideration of this matter. ERCOT is available to answer any questions the Commission may have and stands ready to take other action as directed by the Commission.

Regards,

/s/ Kenan Ögelman_

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