

## Comments of Powerex Corp. on Frequency Response Phase 2 Issue Paper

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Powerex appreciates the opportunity to submit comments on CAISO's December 15, 2016 Issue Paper in Phase 2 of the Frequency Response Initiative.

In the Issue Paper, CAISO explains that it is evaluating the merits of establishing a formal market structure for primary frequency response service in order to ensure long-term compliance with Reliability Standard BAL-003-1, "Frequency Response and Frequency Bias Setting." CAISO explains that it has identified two primary limitations on its ability to achieve the level of primary frequency response required under the BAL-003-1 standard: (1) its ability to effectively position its generation fleet so that it is able to respond to frequency disturbances; and (2) its ability to incentivize investments in primary frequency response capabilities and performance. CAISO seeks stakeholder input on whether addressing these limitations and achieving long-term compliance requires changes to its existing ancillary service market design and tariff requirements. CAISO adds that it believes that the "procurement of grid services such as frequency response capabilities and provision would be done through the ISO's market mechanisms to support grid reliability [and] not through bilateral capacity markets for sufficient capacity to deliver energy."<sup>1</sup>

Powerex strongly supports CAISO's decision to commence a proceeding focused on establishing a market mechanism for the procurement of primary frequency response capability. Powerex has consistently supported the development of a distinct primary frequency response product for the procurement of primary frequency response service in the day-ahead and real-time markets. As CAISO acknowledges in the Issue Paper, in order to meet its obligations under Reliability Standard BAL-003-1, CAISO must "hold back" sufficient resources from providing energy and other ancillary service products to ensure that they are available to provide autonomous response to frequency disturbances. Adopting a distinct primary frequency response product would appropriately recognize the opportunity costs associated with providing primary frequency response capability and provide market-based compensation to those resources that contribute to meeting critical reliability needs.

Establishing a distinct primary frequency response product also will help ensure that the procurement of primary frequency response service is co-optimized with the procurement

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<sup>1</sup> Issue Paper at 18.

of energy and other ancillary service products. In practice, the ability and cost of providing primary frequency response capability will vary from resource-to-resource. Creating a discrete primary frequency product will provide CAISO with a mechanism to take such differences into account, allowing CAISO to position and dispatch resources in a manner that both meets CAISO's needs for energy and the full range of ancillary services, including primary frequency response, and minimizes costs given available resources.

While Powerex supports the development of discrete day-ahead and real-time primary frequency response products, Powerex believes that relying solely on the short-term procurement of primary frequency response service would be imprudent for a number of reasons.

As an initial matter, establishing a short-term procurement mechanism may optimize the positioning of resources that already exist and are enabled to provide primary frequency response service, but it provides no assurance that there will actually be sufficient resources available to meet primary frequency response needs. In particular, while CAISO states that one of the primary goals of this initiative is to produce "price signals that incentivize capital investments [in] resources to be capable of primary frequency response,"<sup>2</sup> it is unlikely that a short-term procurement mechanism alone will be capable of incenting investments in developing new primary frequency response capabilities. This reflects that the revenues received from the short-term markets for energy and ancillary services generally are insufficient to cover the ongoing fixed costs of existing facilities, let alone the cost of new capital investments. Although prices in some intervals may approach the level necessary to provide a meaningful contribution to fixed costs, this happens infrequently, without providing the type of certainty necessary to incent investments in new capabilities and resources. As a result, establishing a short-term market for primary frequency response capability, without more, is unlikely to incent additional capital investments in primary frequency response capabilities.

In addition, CAISO's focus on the short-term procurement of primary frequency response capability through CAISO's day-ahead and real-time markets would appear to preclude external resources from playing a role in meeting CAISO's primary frequency response needs. CAISO recently conducted a competitive solicitation process to procure transferred frequency response ("TFR") from external balancing authorities ("BA") to achieve compliance with the BAL-003-1 standard during the 2016-2017 compliance year. Multiple parties competed in this solicitation process, which resulted in executed agreements acknowledged by CAISO to be cost-effective.<sup>3</sup> Despite the success of this approach, the Issue Paper indicates that CAISO does not plan to utilize TFR as a part of its long-term framework for achieving compliance. Instead, it appears that CAISO plans to rely solely on internal resources to allow it to achieve compliance with the BAL-003-1

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<sup>2</sup> Issue Paper at 5.

<sup>3</sup> See, e.g., Cal. Indep. Sys. Operator Corp., Filing of Rate Schedule No. 85, Docket No. ER17-408-000 (Nov. 22, 2010), Transmittal Letter at 4 (noting that Bonneville's offer to supply TFR was below CAISO's estimated cost to secure frequency response through the procurement of additional regulation up capacity).

standard—even if procuring TFR could more effectively and efficiently meet these needs. Powerex believes that such a limitation is inconsistent with CAISO’s goal of ensuring compliance with the BAL-003-1 standard at least total costs.

For these reasons, Powerex believes that additional steps are necessary to ensure that CAISO is able to achieve compliance with the BAL-003-1 standard in a cost-effective manner. Specifically, Powerex believes that any long-term framework for achieving BAL-003-1 compliance should include a forward procurement requirement, and that such procurement should allow primary frequency response requirements to be met using the most efficient combination of internal and external resources. In particular, Powerex believes that CAISO should modify its existing resource adequacy (“RA”) framework to include a one-year forward procurement requirement for primary frequency response capability. Under this framework, each load-serving entity (“LSE”) would be responsible for securing resources and contracts in advance of each compliance year sufficient to meet an appropriate portion of CAISO’s obligations under the BAL-003-1 standard. Each LSE would, in turn, meet its obligation through a combination of: (1) committed internal generation resources, who would have an obligation to offer to provide primary frequency response capability on a daily basis during the compliance year; and (2) contracts for TFR with external BAs.<sup>4</sup>

Powerex believes that establishing an explicit forward procurement requirement, along with a discrete primary frequency response product in the day-ahead and real-time markets, will give CAISO the tools necessary to comply with the BAL-003-1 standard across the full range of planning and operational timeframes. By committing resources in advance, a forward procurement requirement would ensure that there were sufficient resources with the capability and obligation to provide the headroom necessary to meet primary frequency response needs. In effect, it will allow CAISO to “lock in” its ability to meet critical reliability needs in advance of each compliance year. In addition, a forward procurement mechanism will help provide efficient price signals for the investment in primary frequency response capability. In the day-ahead and real-time markets, CAISO could then use the most efficient combination of internal generating units offered into its markets—including those without a forward obligation—to preserve adequate headroom to meet primary frequency response requirements.

In addition, providing LSEs with the option to enter into contracts for TFR will help ensure that CAISO is achieving compliance with the BAL-003-1 standard using the most cost-effective procurement strategy. To the extent that external BAs have surplus primary frequency response capability or can otherwise provide primary frequency response more efficiently than internal resources in the CAISO BAA, LSEs will have an incentive to enter into contracts for TFR with external BAs to meet their reliability obligations. Conversely, to the extent that internal resources in the CAISO BAA provided a more efficient option,

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<sup>4</sup> While the foregoing anticipates that California LSEs would be able to enter into contracts for TFR to satisfy their forward requirement to procure primary frequency response, such contracts would need to identify CAISO as the BA receiving the TFR.

LSEs would have an incentive to forego contracts for TFR in favor of procuring primary frequency response capability from internal resources. By providing direct comparability between the cost of forward procurement of frequency response from internal resources and the forward procurement of TFR, such a framework would help minimize the total costs of complying with the BAL-003-1 standard.