

**Comments of Powerex Corp. on  
Flexible Ramping Product Refinements  
Draft Final Proposal**

| <b>Submitted by</b>       | <b>Company</b> | <b>Date Submitted</b> |
|---------------------------|----------------|-----------------------|
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Powerex appreciates the opportunity to submit comments respecting the CAISO’s May 8, 2020 Flexible Ramping Product Refinements Draft Final Proposal (“Draft Final Proposal”) and related stakeholder presentation.

Powerex continues to support the CAISO’s general approach of identifying near-term improvements to the current Flexible Ramping Product (“FRP”) design while also pursuing more extensive changes that require additional time for development, approval, and implementation. With respect to the revised aspects of the Draft Final Proposal, Powerex provides the following comments.

*Local FRP Procurement Constraint*

Powerex agrees that under the current approach the CAISO balancing authority area (“BAA”) may frequently not be required to procure any FRP from within its BAA (as a result of its significant import capability). The Draft Final Proposal seeks to address this issue by requiring some level of “local” procurement of FRP in BAAs with a substantial stand-alone FRP requirement. Specifically, it proposes to require such local procurement for any BAA with a stand-alone FRP requirement that represents more than 60% of the total of all stand-alone FRP requirements for the entire EIM footprint. The quantity that is proposed to be procured locally is the applicable BAA’s FRP requirement multiplied by the Diversity Benefit Factor.

This approach is simpler than what was previously proposed in the Revised Straw Proposal, as the prior proposal required not only that a “pivotal” entity’s FRP requirement be procured locally, but it also limited the diversity credit for that entity. This latter concept appears to have been eliminated from the Draft Final Proposal.

This change is illustrated in the example found in Table 6 of the Draft Final Proposal, reproduced below:

*Table 6: Example of minimum requirement being enforced*

|  | BAA1  | BAA2 | BAA3 | Total | System |
|--|-------|------|------|-------|--------|
| Independent FRU requirement              | 650   | 150  | 200  | 1000  |        |
| Diversity Benefit Factor                 |       |      |      |       | 45%    |
| EIM System Requirement                   | 292.5 | 67.5 | 90   | 450   |        |
| Pivotal BAA Threshold %                  |       |      |      |       | 60%    |
| Pivotal BAA                              | Yes   | No   | No   |       |        |
| Minimum BAA Requirement                  | 292.5 | 0    | 0    | 292.5 |        |
| Remaining EIM System Requirement         |       |      |      | 157.5 |        |
| Nominal % to be Held Local for Remaining |       |      |      |       | 10%    |
| Minimum BAA Requirement all BAAs         | 292.5 | 6.75 | 9    |       |        |

In this example, the stand-alone FRU requirement for BAA1 is 650 MW, representing 65% of the sum of the FRU requirement for all three entities; BAA1 is therefore “pivotal” and subject to a local minimum requirement. Under the Draft Final Proposal, the quantity of that requirement is 292.5 MW, which is equal to the stand-alone 650 MW multiplied by 45% (the diversity benefit factor). In other words, even where BAA1 is anticipated to have a need for up to 650 MW of FRU, up to 357.5 MW (equal to BAA1’s diversity credit) can still be provided from adjacent BAAs under the Draft Final Proposal. This is materially greater than the amount that could be provided from adjacent BAAs under the previous proposed approach set forth in the Revised Straw Proposal.

Powerex does not necessarily oppose the Draft Final Proposal formulation of the minimum BAA requirement. Powerex notes, however, that the change from the Revised Straw Proposal appears substantial, but no supporting discussion or analysis has been provided. Powerex suggests that the final proposal contain at least a qualitative discussion on the reasonableness of assuming the full amount of diversity credit can be delivered from adjacent BAAs.

#### *Performance Metrics*

Powerex has previously suggested that CAISO monitor the performance of resources awarded FRP to verify that those resources can be deployed for energy—and actually deliver energy—when needed. The Draft Final Proposal responds that:

*If after implementation of nodal deliverability, the CAISO observes instances of resources unable to respond to 5-minute dispatches being awarded the flexible ramping product, this may require a design change to consider other approaches...<sup>1</sup>*

Powerex is unclear why the CAISO’s evaluation of FRP award performance should be tied to the implementation of nodal deliverability, which is not planned until late 2021 (and could require additional time beyond that date).<sup>2</sup> Either the FRP framework succeeds in positioning flexible resources capable of responding to real-time energy dispatches or it does not, and it would appear

<sup>1</sup> Draft Final Proposal at 6.

<sup>2</sup> Powerex understands that nodal FRP procurement is expected to be developed and implemented together with the introduction of a day-ahead Imbalance Reserve product.

important to know these outcomes regardless of whether or not FRP is awarded on a nodal level. Prior to implementation of nodal procurement, perhaps the reasons for non- or under-performance may not only be transmission constraints that prevent deployment of the resource but also other reasons such as the non-performance of specific resources. Such information would appear important to enable the CAISO to fine-tune its interim approaches including the minimum BAA requirements or the possible need for sub-area requirements, as well as possible refinements to resource qualifications to provide FRP.<sup>3</sup>

Powerex continues to believe that it would be beneficial for the CAISO to monitor the performance of resources receiving FRP awards when called upon to deliver energy.

### *FRP And Its Relationship To Scarcity Pricing*

The Draft Final Proposal states that the demand curve for FRP, if properly implemented, would form part of an overall scarcity pricing framework in the CAISO markets. Powerex, along with other stakeholders and the Market Surveillance Committee, have repeatedly urged the CAISO to develop more robust scarcity pricing in its markets so that as supply conditions tighten, prices gradually rise above the incremental energy offer of the last resource dispatched for energy. The use of demand curves for reserve products is a modern approach to scarcity pricing supported by FERC and adopted in several other organized markets.

As the Draft Final Proposal recognizes, the current implementation of the FRP design fails to accurately indicate a shortfall of FRP in market prices for FRP, since many resources incorrectly appear to be able to provide FRP when in fact they are not deliverable due to transmission constraints. The Draft Final Proposal states that implementation of nodal procurement of FRP will avoid the inaccurate over-statement of FRP from non-deliverable resources, and hence provide appropriate scarcity pricing signals.

Powerex appreciates the attention given to the need for scarcity pricing in the CAISO markets. However, as others have noted, current scarcity pricing mechanisms in the CAISO markets are “anemic, infrequent and short-lived.”<sup>4</sup> Importantly, the issue of scarcity pricing goes far beyond existing deficiencies in the implementation of FRP, and thus the lack of meaningful scarcity pricing will not be addressed even if nodal FRP procurement is implemented. For these reasons, Powerex believes it is not appropriate to defer consideration of robust and comprehensive scarcity pricing measures until the nodal procurement aspects of FRP are in place.

In particular, effective scarcity pricing requires defining a downward sloping demand curve for *all* reserve products, not just FRP. Moreover, these reserve procurement demand curves must be applied in both the day-ahead and real-time markets. To the extent satisfying the energy power balance constraint requires reduced procurement of one or more reserve product, the marginal cost of each reserve product should be added to the incremental energy cost when computing

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<sup>3</sup> See Draft Final Proposal, at 13-14 (discussing a nominal minimum requirement for non-pivotal areas, and the need to potentially “consider if sub-BAs are warranted as well.”)

<sup>4</sup> Comments of Calpine on System Market Power Revised Straw Proposal (May 2020), at 4.

the market-clearing prices for energy.<sup>5</sup> Finally, robust scarcity pricing requires a market design that reflects the need for all of the products and services required to reliably operate the grid. To the extent the current market formulation does not fully represent all such products—as indicated by manual operator interventions or out-of-market actions—then parameter prices also need to be applied when such actions are taken.

Powerex welcomes CAISO's continued engagement and dialog with stakeholders to explore enhancements to introduce accurate and effective scarcity pricing in the CAISO markets.

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<sup>5</sup> Powerex notes that an operating reserve demand curve is most applicable to markets where energy is co-optimized with the procurement of these operating reserve products. In real-time, however, the procurement of energy is not co-optimized with reserves, in which case an alternative approach is necessary to indicate conditions when meeting demand involves depleting one or more types of reserves (e.g., Regulation Up).