Powerex appreciates the opportunity to submit comments on CAISO’s December 28, 2016 Load Conformance Limiter Enhancement Technical Bulletin (“Technical Bulletin”). Powerex and other market participants previously expressed concerns regarding CAISO’s use of a load conformance limiter in a proceeding before FERC. Powerex appreciates CAISO’s efforts to follow-up on those prior concerns.

Powerex recognizes the need for system operators to be able to enter manual adjustments to automated load forecasts. As the Technical Bulletin explains, such manual adjustments may be necessary not only to provide a more accurate forecast of load, but also to integrate a range of other system conditions that shift the overall supply/demand balance, and hence the net need for imbalance energy.1 The load forecast adjustment is intended to represent “operators’ best judgement of current system operational and reliability needs.”2 Powerex believes that market operations should be based on the most accurate available information, and supports providing operators with the tools to supplement the automated market systems with their best judgment.

Powerex also recognizes that, as with all manual processes, the entry of a load adjustment carries a risk of error. Moreover, as explained in the Technical Bulletin, these adjustments tend to be “coarse,” made under rapidly evolving circumstances, and may not be “finely tuned or gradually applied.”3 As a result, there is a potential that the load adjustment that is made may not precisely reflect actual system conditions.

Powerex does not believe, however, that the load bias limiter, either as currently implemented or as proposed in the Technical Bulletin, is an effective or appropriate tool to protect against the possibility that a load forecast adjustment will be inaccurate. Notably, application of the limiter is not based upon an objective assessment of whether the load forecast adjustment resulted in a more accurate estimate of the quantity of imbalance energy for a given interval. In other words, there is no assessment of the accuracy of an adjustment to determine whether or not it should be “limited.” Instead, the limiter is based entirely on an assessment of the price impact associated with the load forecast adjustment: a load adjustment that triggers power balance constraint penalty prices is deemed to be inaccurate, while a load adjustment that does not trigger such penalty prices is deemed to be accurate. Thus, the limiter is not based on a meaningful assessment of whether the load forecast adjustment accurately reflected a genuine supply

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1 Technical Bulletin at 4.
2 Id.
3 Id.
shortage in the market; it is based entirely on the price impact associated with applying the operator’s load forecast adjustment. As Powerex has previously stated, and as is discussed later in these comments, Powerex believes that there are appropriate ways to address the concerns identified in the Technical Bulletin regarding the coarse nature of manual load forecast adjustments and their potential to have a significant effect on market outcomes.

With regard to the specific enhancements proposed in the Technical Bulletin, Powerex views these proposed enhancements as having two broad types of results. First, the proposal would restrict application of the load bias limiter in certain circumstances. More specifically, the limiter will only apply to the extent the load forecast adjustment is increased from the prior market interval.4 Under CAISO’s proposal, if the prior market interval included a load forecast adjustment without resulting in a power balance constraint violation, then that same level of load forecast adjustment would be permitted in the current interval—even if that same adjustment now results in a power balance constraint violation in the current interval. Powerex believes that this proposed change appropriately recognizes that power balance constraint violations occur due to factors other than the load forecast adjustment.

Powerex strongly objects, however, to the second type of outcome under the proposed enhancements, which is to require a load forecast adjustment beyond the quantity entered by the operator in certain circumstances. As proposed, the limiter would be applied to prevent the operator from reducing5 a load adjustment that was entered in the prior interval, and require all or a portion of that prior adjustment to remain in force for the current interval, even where the operator believes that it no longer accurately reflects system conditions. In these circumstances, the final load forecast value used to run the market will no longer lie somewhere between the automated load forecast and the operator’s “best judgment of current system operational and reliability needs.” In fact, the Technical Bulletin contemplates that the enhancement could result in the limiter requiring a forecast adjustment in the opposite direction to what was entered by the operator, as shown in the second and third panels of Example 5.

In Powerex’s view, there is a critical distinction between the current design, which limits the ability of an operator to manually deviate from the automated load forecast, and the proposed enhancements, which would require such a deviation even in cases that the operator, in its best judgment, finds it unnecessary and has not requested it. The latter is perhaps not properly described as a “limiter” at all, and appears inconsistent with ensuring that locational marginal prices are based on the best information available.

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4 Since load forecast adjustments may be positive or negative, “increased” refers to an adjustment in the same direction as the prior interval but with a larger absolute value (e.g., 20 MW in Interval 1 and 30 MW in Interval 2; or -10 MW in Interval 1 and -25 MW in Interval 2). “Increased” also refers to any load forecast adjustment value following an interval with no load forecast adjustment at all (e.g., 0 MW in Interval 1 and 10 MW in Interval 2; or 0 MW in Interval 1 and -15 MW in Interval 2).

5 A reduction in the load forecast adjustment refers either to a load forecast adjustment in the same direction as the prior interval, but of smaller absolute value, or a load forecast adjustment in the opposite direction as the prior interval, regardless of magnitude.
To avoid the potential for such problematic outcomes, Powerex recommends that the proposed enhancements be modified such that the limiter does not result in (1) a load forecast adjustment with an absolute value that exceeds the original value submitted by the operator for the same interval; or (2) a load forecast adjustment in the opposite direction to the original value submitted by the operator for the same interval.

Finally, Powerex notes that this proceeding provides a valuable opportunity to redesign the load bias limiter in a manner that promotes the accuracy of load forecast adjustments. Currently, the limiter only is being applied infrequently, at least in the EIM. Specifically, the CAISO Department of Market Monitoring’s most recent quarterly report found that “the power balance constraint was relaxed very infrequently during the third quarter, and therefore the load bias limiter had a very minor impact on overall prices.” Powerex believes that the current environment of stable and generally resource-sufficient market operations, during which the limiter has little influence on market outcomes, provides CAISO with the time that it needs to consider how it can redesign the load bias limiter to more appropriately achieve its goal of avoiding price distortions caused by potentially erroneous or “coarse” load forecast adjustments.

In Powerex’s view, CAISO’s goal can be more appropriately achieved by:

1. Developing screening tools to identify, and appropriately limit, potential “outlier” values entered by the operator, indicating possible data entry errors;
2. Evaluating the historical accuracy of load forecast adjustments in order to establish evidence-based guidelines to identify load adjustments that are outside the normal range and should be considered for limitation; and
3. Introducing escalating penalty prices for power balance constraint violations, such that minimal changes in quantities do not lead to severe changes in prices.

The above steps would more meaningfully detect and prevent load forecast adjustments that do not improve the accuracy of the information used to operate the markets. Moreover, they can reduce the potential for very small changes in the load adjustment quantity to drive very large changes in price. Such an approach would no longer limit load forecast adjustments based on their impact on prices, but would instead strive to objectively identify inaccurate load adjustments.

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