Comments of Powerex Corp.

CAISO Flexible Ramping Constraint Penalty Price

Submitted by	Company	Date Submitted
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Powerex appreciates the opportunity to provide comments on CAISO's proposed modification of the Flexible Ramping Constraint penalty price from the current level of $247 to the proposed level of $60. The discussion surrounding the flexible ramping constraint penalty price demonstrates that this is a complex issue, and one whose ramifications have changed with the implementation of the financially binding Fifteen Minute Market earlier this month.

Powerex is concerned that the proposed change in the penalty price is not supported by the analysis relied upon by CAISO. Powerex is also concerned that any shortcomings of the interim Flexible Ramping Constraint are best addressed by replacing it with the Flexible Ramping Product, not by embarking upon modifications to the interim design.

1. FRC Penalty Price Should Not be Used to Pursue Price Convergence

CAISO identifies the primary reasons for revisiting the FRC penalty price. It claims that the shadow price on FRC is strongly *correlated* with price divergence between the 15-minute Real Time Pre-Dispatch (RTPD) and the 5-minute Real Time Dispatch (RTD). It also observes that the Fifteen Minute Market makes the results of the RTPD financially binding, suggesting that this somehow necessitates changes to the FRC. Neither reasons justifies changing the FRP penalty price, however.

First, CAISO's analysis correlating price divergence and the FRP shadow price is based on data from September 2012 through August 2013, and thus pre-dates implementation of the Fifteen Minute Market earlier this month. Any conclusions drawn from that analysis therefore entirely depend on whether the revised real-time market design would yield similar results. CAISO should first demonstrate that the FRP shadow price is an important driver of price divergence between FMM and RTD.

Second, to the extent that the flexible ramping capacity needs in the FMM are, indeed, different from those in the RTD, it may be entirely appropriate for prices in those two markets to reflect those differences. Powerex has consistently supported measures to address persistent price divergence and promote price convergence, but efficient price convergence does *not* mean that LMP prices on a stand-alone basis in the two sequential markets must be *equal*. Therefore, CAISO's apparent conclusion that price differences between FMM and RTD necessarily require modification of the FRC is unsupported.

Third, the financially binding nature of the FMM creates the potential for uplift payments due to compensation of resources providing flexible ramping constraint capacity in the FMM, and CAISO appears to suggest that such uplift should be avoided. However, whether this new uplift necessitates a modification to the FRC implementation boils down to the practical question of whether those uplift payments are excessive for the value being provided, and/or can be exploited in a manner which does not provide commensurate value for the services provided. CAISO has not provided any information suggesting either of these outcomes can be expected, or are currently being experienced.

In short, CAISO has not provided any compelling reason to disturb the Flexible Ramping Constraint settlement. In the absence of any such compelling reason, Powerex believes CAISO's and stakeholder's efforts should continue to focus on developing a robust Flexible Ramping Product.

2. CAISO's Analysis Does Not Support Changing the Penalty Price to $60

CAISO bases its proposed $60 penalty price on its conclusion that meeting the flexible ramping constraint through additional unit commitments is more effective than meeting it through unit "positioning" (*i.e.,* holding a unit's output below its otherwise economic level). According to CAISO, it analyzed data from September 2012 through August 2013, and observed a "break point" at approximately $60. Below this break-point, there was a positive relationship between increased FRC shadow price and a reduced incidence of power balance violations. Above the break-point, increased FRC shadow price was actually associated with *higher* levels of power balance violations. CAISO concludes that the actions it takes to satisfy the FRC at shadow prices above $60 are less effective at avoiding power balance violations. In other words, there is no additional value in procuring FRC capacity if the shadow price exceeds $60.

The analysis offered by CAISO does not support such a proposal. For example, during the data study period, CAISO reports that FRC shadow prices between $60 and $240 are associated with power balance violations in 364 hours, with an average hourly violation of 8.2 MW. The analysis does not show how much higher — both in frequency and in magnitude — these power balance violations would have been if the FRC shadow price had been limited to $60. This is a highly relevant question, and one that CAISO has not addressed. In effect, the CAISO has translated the correlation between higher FRC shadow prices above $60 and higher power balance violations to suggest that FRC does not reduce the risk of power balance violations above a $60 level, without any supporting evidence of such a causational relationship.

In addition, CAISO has not demonstrated that changing the penalty price will address the primary motivation for its proposal, which is the potential effect on price divergence between FMM and RTD. Table 1 of CAISO's Technical Bulletin shows that FRP shadow prices exceeded $60 in fewer than 10% of the hours during the study period (837 hours out of 8,760). The effect of limiting the shadow price in just 10% of hours seems highly unlikely to substantially improve price convergence between FMM and RTD. And, as discussed above, the relationship between FMM and RTD may be very different under the new FMM design that during the study period.

Finally, the finding of a $60 "break point" is certain to reflect the market and physical conditions that existed during the September 2012 – August 2013 review period, including but not limited to natural gas prices,. Under different conditions, that break point may have been found at either higher or lower prices. The CAISO proposal would appear to require regularly re-visiting and adjusting such an *interim* ad-hoc measure.

3. CAISO and Stakeholder Should Focus on Developing and Implementing the Flexible Ramping Product

CAISO's discussion of the FRC penalty price raises additional issues that would benefit from greater exploration and stakeholder engagement. For example, CAISO states that the FRC is not enforced at all in RTD (which is why unit "positioning" in FMM is of relatively little value). It is unclear why there would be no FRC enforced in RTD, however. While system conditions that were uncertain during RTPD will obviously not be uncertain in RTD, there will still be variability in conditions from one 5-minute interval to the next. Thus, preserving "headroom" on certain flexible units even within the 5-minute dispatch would reserve flexible ramping capacity to meet ramping needs from one interval to the next, even if there is no remaining uncertainty about what those ramping needs will be.

As with the CAISO's FRC penalty price, however, a closer examination of the different flexible ramping needs in the FMM and RTD are most beneficially addressed in the development of the Flexible Ramping Product. Powerex looks forward to working with CAISO and other stakeholders on that initiative.