Pacific Gas and Electric Company

Comments of Pacific Gas and Electric Company
Flexible Ramping Constraint Draft Revised Tariff Language

Submitted by		Company	Date Submitted
Marie Fontenot Partha Malvadkar	(415) 973-4985 (415) 972-5482	PG&E	May 19, 2014

Pacific Gas and Electric Company (PG&E) offers the following comments in the stakeholder process for the California Independent System Operator's (CAISO) Flexible Ramping Constraint revised tariff language, posted May 9, 2014.

PG&E supports the CAISO's proposal to reduce the Flexible Ramping Constraint penalty price from its current value of $247 to $60. The proposed change is an appropriate step for three reasons:

- The analysis that informed the decision to lower the Flexible Ramping Constraint penalty price indicted that a $60 penalty parameter is more effective in ensuring ramping is available and reducing the amount of positive power balance violations;
- Lowering the Flexible Ramping Constraint penalty price will improve price convergence and lower potential gaming opportunities; and
- The CAISO's process to change the penalty parameter is reasonable

1. The analysis that informed the decision to lower the penalty price is sound.

In an April 14, 2014 Technical Bulletin the CAISO described its analyses of the Flexible Ramping Constraint shadow price and power balance violations in 2013. The findings can be summarized to state that when the shadow price is binding up to approximately $60 the Flexible Ramping Constraint commits additional resources to resolve the constraint. However, beyond $60, the shadow price was less effective in that it only redispatched resources, producing "phantom ramp", with this redispatch being ultimately unwound in the real-time dispatch.

The CAISO's approach of studying the impact of the shadow price in different price ranges and changing the parameter values produced sound results that PG&E supports.

2. Lowering the penalty price will contribute to price convergence.

Consistency between hour-ahead, 15-minute, and 5-minutes prices in the current CAISO markets is critical to ensure the market are running efficiently, proper incentives are given to participate in the markets, and gaming opportunities are mitigated. In its 2013 Third Quarter report, the DMM investigated the difference in the system marginal energy cost between the current real-time pre-dispatch (15-minute process) and the current real-time and day-ahead markets, finding that in 2013 the real-time pre-dispatch price has on average exceeded day-ahead levels by 19 percent and real-time levels by 26 percent and attributed these differences in part to the interaction between enforcement of the flexible ramping constraint. This interpretation is consistent with the CAISO's analysis. The DMM later clarified that lowering the Flexible Ramping Constraint penalty price would minimize extreme prices spikes in the 15-minute market, when the constraint is binding.[1]

The CAISO should ensure that its new markets are functioning properly such that the day-ahead and 15-minute markets properly converge due to the market models consistently valuing energy and flexibility. A high FRC penalty parameter (such as $247) while not effective at obtaining additional unit commitments, could also result in high 15 minute market price spikes, driving 15 minute prices higher. Inconsistent prices between the 15-minutes markets and the DA and RT markets could lead to a number of unintended consequences including large virtual demand positions driving up day-ahead load and leading to possible overgeneration events or an increase in implicit virtual bidding arbitraging 15 and 5 minute prices.

3. CAISO's process to change the penalty parameter is reasonable.

Finally, as a matter of process and due diligence, PG&E is supportive of the CAISO's approach in lowering the penalty price. In our comments to FERC, PG&E asked that the interactions between the Flexible Ramping Constraint and 764 be fixed prior to go live of the financially binding 15-minute market to ensure price convergence and FERC gave us what we asked for in saying that the CAISO had the authority and commitment to make these fixes. FERC stated, "Further, we find that CAISO has adequately explained how the flexible ramping constraint has contributed to price

[1] Department of Market Monitoring 2013 Fourth Quarter Market Performance Report, pages 24-25. http://www.caiso.com/Documents/2013FourthQuarterReport-MarketIssues_Performance-Feb2014.pdf

divergence, and has committed to fine-tuning its use of the flexible ramping constraint, which should improve price convergence between the 15-minute and 5-minute prices."[2] Interveners in the docket had the opportunity to object, but no party did so at that time.

Since the CAISO has elected to file the penalty price change with FERC out of an abundance of caution, PG&E supports the reasonable draft tariff language and a review and comment period to ensure thorough stakeholder vetting. The CAISO has met the burden stakeholder vetting by posting revised Flexible Ramping Constraint tariff language on May 8, 2014 and accepting stakeholder comments on May 19, augmented by a conference call to discuss the change on May 21.

To PG&E's knowledge, no party is against the CAISO's goal of greater convergence between 5-minute and 15-minute prices. The CAISO's updated tariff language and proposal to lower the Flexible Ramping Constraint penalty price is a promising step toward this goal.

---

[2] FERC Order on CAISO Tariff Revisions (to accommodate Order 764 Market Design Changes), March 20, 2014, page 21. http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13489192