

**CALIFORNIA ISO
FLEXIBLE RAMPING PRODUCTS**

**COMMENTS OF THE STAFF OF THE
CALIFORNIA PUBLIC UTILITIES COMMISSION
ON THE AUGUST 9, 2012 REVISED DRAFT FINAL PROPOSAL**

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August 23, 2012

Overview

The Staff of the California Public Utilities Commission (the CPUC Staff) appreciates this opportunity to comment on the California Independent System Operator’s (ISO’s) *Revised Draft Final Proposal* (“Revised Proposal”) for deploying new Flexible Ramping Products (FRP) within the overall electricity market design and operations.

The innovative FRP proposal has benefitted from extensive discussions, iterations and examples, for which the CPUC Staff wishes to express appreciation. The issues and the proposed product are highly technical, and there will be several years lead time before penetration of variable wind and solar generation reaches levels projected to be most operationally challenging. Thus, it is not urgent to deploy a complex “ultimate” FRP solution immediately. Rather, to synopsise our previous recommendations of July 24, the CPUC Staff recommends the following.

- Excessive complexity should be avoided in the initial FRP rollout, which instead should emphasize cost control, administrative efficiency, and transparency of process and results.
- The ISO should explicitly provide for post-deployment monitoring and FRP revision going forward, including use of (1) a design that supports both monitoring and adjustment such as by using implementation parameters that are readily derived, critiqued and adjusted, and (2) specific monitoring and reporting programs.
- To help assess economic efficiency and cost versus value, results and costs for FRP deployment should be compared to those for its predecessor flexible ramping constraint (FRC), as well as for regulation and spinning reserve products.

CPUC Staff Comments

With regard to specific elements of the August 9 Revised Proposal, the CPUC Staff make the following recommendations.

1. Procurement and deployment of FRP should be based on “real ramp” (expected net load change plus uncertainty range) rather than based on “unexpected ramp.”
2. FRP procurement amounts should be based on transparent minimum and maximum targets based on relevant statistical data. This can be combined with “demand curves” to adjust procurement between the minima and maxima, if the curves are appropriately developed, monitored and adjusted as further discussed under topic A below.
3. Initial FRP deployment should be only in the RT market, since also deploying DA FRP would significantly add to design and implementation complexities, including efficient post-deployment monitoring and adjustment. This is discussed more fully under topic B below. A DA FRP market may well be ultimately desirable, and if implemented should be accompanied by real time (RT) buyback of FRP procured in the day ahead (DA) market, based on RT needs and bids.
4. Energy bids should be fully factored into FRP commitment and deployment (e.g., biasing against commitment for FRP of a unit having a low FRP bid but a high energy bid). The CPUC Staff thus request that the ISO confirm and clarify how this will occur under the proposed FRP design.
5. Variable energy resources (both in and outside of PIRP) should be allowed to submit decremental energy and FRP down bids. The ISO should clarify the consequences (e.g., regarding nonperformance) of headroom estimates and decremental instructions pursuant to such bidding being rendered infeasible due to inaccurate 15 minute forecasts 37.5 minutes before an operating interval.
6. Unawarded regulation should be eligible for use as FRP (paid at FRP price), provided that the roles of energy bids and regulation mileage bids in this context are clarified.¹ The ISO should defer the original proposal to allow conversion of spinning reserves to FRP. Prices for FRP, spin and regulation should be monitored and compared after implementation.
7. The CPUC Staff oppose allowing FRP self-provision.
8. CPUC staff tentatively support the proposal for cost allocation among three market segments and, separately, among scheduling coordinators within each segment,

¹ It is unclear whether energy bids would automatically qualify regulation bidders as default FRP bidders regardless of regulation bids, or if regulation bidders’ expectations (bids) for obtaining mileage payments should affect their implied FRP bids and/or FRP payments.

including (to the extent feasible) use of the “delta” of deviations for each interval rather than cumulative deviations. But the ISO should clarify the rationale for using allocation metrics that differ for different segments and also differ for within-segment (among scheduling coordinators) versus between-segment allocations. The CPUC Staff continue to believe that allocating FRP costs to SCs based only on “bad” deviations (contributing to overall system imbalance or added flexibility needs) may be useful unless the ISO demonstrates that it produces essentially the same result as allocation based on all deviations.

9. The ISO should explicitly provide for release and assessment of ongoing post-deployment information on: FRP procurement minimum and maximum targets; demand curves; actual procurement amounts, prices and costs for different procurement periods; actual deployment of FRP capacity for energy, such as within the same hour of initial FRP commitment; and other information as appropriate. This will be essential not only for assessing economic efficiency and potential exercise of market power, but also specifically for accomplishing the necessary adjustment of demand curves to maximize economic efficiency and value versus cost. The next iteration of the proposal should provide greater detail on the above post-deployment reporting matters, going beyond the general statement in Section 4.2 of the Revised Draft Final Proposal that post-deployment data publication will be “similar to what is currently provided for other ancillary services products.”
10. The extent and circumstances of existing power contracts being significantly harmed by allocation of previously unanticipated FRP costs to scheduling coordinators is not yet clear – and neither is the appropriate solution to this issue. The extent of such problems should be clarified² and the ultimate FRP proposal and tariff language should provide for adequate mitigation, for example by delaying allocation of FRP costs to those resources currently having no means of passing any of these costs on to the buyers of their output.
 - A. **CPUC Staff would support applying FRP demand curves between explicit minimum and maximum procurement targets, if implemented with transparency and stakeholder collaboration, with pragmatism emphasizing results at least as much as conceptual rigor, and with full provision for ongoing reporting, assessment and refinement.**

When combined with explicit minimum and maximum procurement targets, the demand curve approach for adjusting FRP procurement amounts should be designed to help manage costs and mitigate market power and gaming opportunities by reducing FRP procurement targets when bids are high relative to attributed value. Apart from any absolute meaning of “value” which will likely remain approximate and incomplete, the demand curves must provide a flexible and

² CPUC Staff is currently seeking information relevant to this issue.

transparent mechanism for pragmatically fine tuning FRP procurement to manage costs relative to benefits, based on assessing both physical and economic results of ongoing deployment.

It is essential that the construction and adjustment of the demand curves be transparent and well vetted. There should be clearly defined criteria and principles for developing demand curves, as well as specific mechanisms for reporting and assessing the ongoing results of FRP deployment as stated under recommendation 9 above. This provides the necessary basis for adjusting and refining the demand curves, which will be inevitable, and will be at least as important as the conceptual design of the curves in the first place. The ISO will need to achieve a balance between accuracy and efficiency on one hand, such as via granularity and updating of demand curves (e.g. for different hours or seasons and to reflect changing system conditions over time), versus maintaining reasonably predictable and stable market signals regarding FRP prices and quantities.

The tariff language to be developed for the FRP should address the principles and concerns summarized above. A Business Practice Manual developed with stakeholder consultation should then define in greater detail the specific mechanisms for constructing and adjusting demand curves, including the specific market information that will be used to inform such adjustment on both a conceptual and a pragmatic (results-oriented) basis.

B. Initial FRP deployment should be limited to the RT market, whereas DA FRP procurement and RUC-IFM integration could be pursued once the initial FRP design is tested and refined.

Deploying FRP in RT will increase complexities well beyond the present FRC, such as by entailing: both “up” and “down” products; assessment of bidding behavior and interplay with other products; development and adjustment of demand curves; and implementation of a new cost allocation process. The substantial new features, challenges, and anticipated benefits should be assessed and adjusted before the ISO adds DA FRP procurement or RUC-IFM integration.

For example, adding a DA FRP market raises the issue of real time buyback of FRP procured in the DA market. While CPUC Staff believe that such buyback would be desirable, it also entails added complexities (such as whether to allow multiple FRP bid segments) as briefly discussed in the August 16 stakeholder meeting. Further, while the proposed FRP demand curves

represent an innovative and potentially valuable feature, they are also challenging and will require considerable attention by the ISO and stakeholders as discussed above. Initially implementing a DA as well as RT FRP market would significantly complicate the implementation of demand curves. For example, should demand curves differ (or have different granularity) for DA and RT? How would DA versus RT magnitudes of FRP procurement be determined, and how would this be accomplished or complicated by demand curves, and by buyback? How would demand curve updating and adjustment occur for DA versus RT?

The CPUC Staff look forward to the final design, deployment, testing and inevitable refinement of what we all hope will be a valuable addition to the ISO's market design, well in advance of anticipated high variable energy resource penetration. We believe that additional benefits may come from a DA FRP market and from RUC-IFM integration, but design and implementation of RT FRP is a sufficiently big, innovative, timely and challenging step, for now.

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