

**CALIFORNIA ISO  
FLEXIBLE RAMPING PRODUCTS**

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**COMMENTS OF THE STAFF OF THE  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
FOLLOWING THE SEPTEMBER 18, 2012 WORKSHOP**

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**September 25, 2012**

**Overview**

The Staff of the California Public Utilities Commission (the CPUC Staff) appreciates this opportunity, following the recent September 18, 2012 technical workshop, to comment on the California Independent System Operator's (ISO's) proposal for deploying new Flexible Ramping Products (FRP) within the overall electricity market design and operations.

The following two sections of these comments summarize CPUC Staff recommendations (Section A) and requested clarifications in the next iteration of the proposal (Section B).

**A. Recommendations**

The CPUC Staff recommend the following adjustments to specific key FRP elements addressed in the September 18, 2012 workshop.

1. ***The initial FRP rollout should be limited to the Real Time (RT) market.***

The proposed FRP and related issues are complex and closely intertwined with other market products and operations, including the energy market. Opportunities during 2012 for discussing and refining the FRP proposal have been valuable and much appreciated. Nevertheless, CPUC Staff continue to believe that due to the complexity and novelty of the current proposal the FRP design for initial deployment should be limited to real-time (RT) market features. This will allow the CAISO to conduct rigorous and transparent post-deployment monitoring, and to assess and adjust key parameters (such as those related to FRP procurement targets and the proposed demand curve) during years when solar and wind production are still well below the 33% RPS requirements. The tariff language should clearly provide for such empirical adjustment based on actual market results.

Implementing RT market features alone will still entail significant changes by introducing two new bid-based products (FRP up and down), which will compete with other products and

constraints within overall market co-optimization. Novel challenges will include the need to establish FRP procurement demand curves for different system conditions combined with minimum and maximum procurement targets, while addressing the close interplay of FRP with the energy markets (which is unlike the interaction of other ancillary services with energy dispatch). Furthermore, costs would be allocated according to a brand new (and potentially controversial) “causation-based” method that separately allocates costs between versus within market segments. And amidst all of these changes, the CAISO must prevent market power and gaming.

For all of these reasons, the proposed day ahead (DA) FRP market and proposed Integrated Forward Market-Residual Unit Commitment (IFM-RUC) integration should be considered and deployed separately after the initial RT FRP deployment. These two major steps represent potentially valuable additional market reforms, but they will introduce substantial further complexities and implications beyond those associated with RT deployment of FRP. IFM-RUC integration was only very recently emphasized and has not been well described or discussed. Furthermore, the near term flexibility need is limited, and there is no urgency to deploy such a complex suite of market reforms in one large step. The CPUC Staff therefore urge the CAISO to separately address these significant market changes beyond RT FRP deployment.

Regarding the RT FRP proposal itself, CPUC Staff agree with basing FRP procurement on “real ramp” rather than on “unexpected ramp,” with disallowing FRP self-supply, and with allowing variable energy resources (within and outside of PIRP) to submit decremental energy and FRP down bids. We tentatively support making unaccepted regulation bids available for FRP and/or requiring FRP bid prices to be no higher than those for regulation, understanding that additional details may need to be refined to make the FRP-regulation relationship workable and fair, which should be resolved before tariff language is written.

***2. Using procurement demand curves delimited by specific minimum and maximum procurement targets is reasonable if the procurement targets and curve parameters are transparent and well reported, and are adjusted based on actual market results.***

Transparency, reporting and empirical adjustment are especially important because there is no a priori method that will guarantee the “right” (most effective and efficient) targets and demand curves. Targets and curves based on statistics regarding historical ramps and power balance would

not capture the dynamic real world economic impacts (positive and negative) of FRP on contemporaneous prices and costs for energy and other market products being co-optimized (competing) with FRP. Neither would they capture the exact impact of FRP procurement levels on system power balance, since there have been, and will be, options other than FRP to address power balance.

**3. *The ISO should provide for substantial post-deployment monitoring and adjustment going forward.***

Besides supporting necessary fine tuning of the RT FRP, this would also provide valuable information for subsequently pursuing a DA FRP market or for making higher FRP deployments in more distant years. Reporting should include FRP targets and demand curve parameters; FRP procurement amounts, prices, costs and utilization for energy including how these compare with experiences for the predecessor Flexible Ramping Constraint; and comparison and correlation with co-occurring prices and costs for other market products being co-optimized (competing) with FRP. The next iteration of the proposal should provide greater detail on the above post-deployment reporting matters and expand on 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.”

**4. *Deployment of FRP should include phase-in of the proposed causation-based cost allocation.***

Deployment of FRP should include a phase-in period during which FRP costs are allocated in the same manner as contingency reserve costs, while “causation-based” cost allocation results are also calculated and provided to market participants on an informational basis. This is important for two reasons. First, the cost allocation method is unprecedented and controversial and thus would benefit from real world testing and, if necessary, adjustment. Second, information provided to the CPUC Staff by the Investor Owned Utilities regarding wind and solar generation indicates that existing power contracting arrangements may often leave allocation of these new market costs unresolved and/or contingent on future developments regarding forecasts and their use. The cost allocation implications of the FRP proposal could vary across LSEs and could depend on what entity schedules the generation. Thus, before FRP costs are actually assigned to particular market participants under a causation-based formula, there should be meaningful opportunity to understand

how such allocation would play out in the actual market, in order to renegotiate contracts and/or refine the allocation method as needed. Such opportunities are of great interest to the CPUC Staff given the CPUC's role of overseeing resource plans and procurement and in maintaining fairness and consistency in planning and procurement.

## **B. Requested Clarifications in the Next FRP Iteration**

The following aspects of the FRP proposal or underlying issues should be clarified in the next iteration of the proposal.

- Clarify and include examples describing how energy bids are either intrinsically or explicitly factored into RT FRP commitment, so that a resource having a low FRP bid but high energy bid would not have an undesirably high probability of being committed or procured for FRP. In addition, the ISO should clarify if and how the probability of FRP capacity being converted to RT energy factors into FRP resource commitment and settlement, either intrinsically (automatically) or explicitly. This includes explaining if and how this differs for units already on line (at the time of RT unit commitment) versus those not yet on line.
- Discuss how future 15 minute scheduling at the interties and, especially, the potential switch to an ISO 15-minute energy market would impact FRP design and operation. In particular, the ISO should explain why it would be efficient or desirable to develop and deploy a particular FRP design even should the system subsequently move to a 15 minute energy market a short time (such as two years) from now.
- Explain how RT FRP deployment would significantly improve upon the present efficacy of the Flexible Ramping Constraint (FRC), as the latter has apparently not reduced energy price spikes as much as had been hoped.
- Provide estimates of the expected approximate amounts of FRP up and down likely to be procured in the year or two after initial deployment, including (for FRP up) comparison with the FRC experience.

- Clarify the relationship among the FRP down bids, decremental energy bids, unit commitment for energy vs. FRP down, conversion of FRP down to actual decremental energy, and settlement for energy and FRP down. This was not well discussed or clarified in the September 18 workshop (e.g., using slide 25 regarding “DEC bidding and FRC Example”). It appears that procurement, utilization and settlement of FRP down necessarily are not fully analogous to those for FRP up, but this requires clarification. These issues should be addressed considering implications for (1) potential use of variable energy resources for FRP down, (2) potential revenues and costs for FRP down vs. energy, (3) subsequent FRP cost allocation based on deviations (especially for variable energy resources) and (4) potential gaming allegations relating to any of the above.
- Clarify how the ISO plans to assess and mitigate potential market gaming via variable energy resources’ FRP down bids.
- Clarify the consequences (such as regarding nonperformance or gaming) of variable energy resource headroom estimates and decremental instructions pursuant to accepted FRP down offers being rendered infeasible due to inaccurate 15 minute forecasts 37.5 minutes before an operating interval.
- Verify and confirm that when internal self-schedules are included as part of the overall market segment (pie slice for cost allocation) representing “internal supply,” the resulting dollar increase in that overall pie slice (aggregate FRP cost allocation to internal supply) would be comparable in magnitude to the portion of costs within that pie slice that is allocated to self scheduling (as opposed to other internal supply). In other words, adding self schedules to the “internal supply” pie slice should not increase the overall dollar size of that slice substantially more (or less) than the (dollar) portion of that slice that is subsequently allocated to self schedules.

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