

California Public Utilities Commission
Flexible Ramping Products Incorporating FMM and EIM
Draft Final Proposal December 4, 2014

Submitted By	Company or Entity	Date Submitted
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CPUC staff appreciates the opportunity to comment on the Flexible Ramping Product market design initiative. The Flexible Ramping Product (FRP) will have significant far reaching and important impacts on the wholesale market. Therefore, it is vital that the CAISO consider and thoroughly address all issues before approving the final design proposal.

Summary:

CPUC staff supports the general direction and concept of the proposal for FRP, except for the significant concerns persisting over the systematic differences in the determination of Day-Ahead and Real-Time demand curve requirements, modeling advisory intervals in Real-Time, impact of regional distribution of FRP procurement, effect of Penalty Prices on price formation, and the allocation of procurement costs to hourly intertie schedules. CPUC staff strongly encourages CAISO to make every effort to incorporate recent stakeholder suggestions to improve the FRP design before submitting it for approval. The costs to market participants from CAISO rushing a less robust design to market and fixing the problems later are greater than the costs of taking a little extra time during the design development phase to address stakeholders' issues.

The revelation that FRP would be procured balancing authority area-wide and allocated in a regional fashion only occurred in the eleventh hour of the stakeholder process. If the CAISO believes that this is a vital part of the policy development, then the stakeholder process should be extended to allow adequate time to discuss this important piece of FRP policy, but it should not be submitted for approval as part of the current proposed design.

The CAISO should perform a robust simulation of the proposed FRP design during design and development phase to ensure market changes perform as intended and minimize unintended consequences.

These concerns are shared by several other stakeholders (e.g. Pacific Gas and Electric, Powerex and the CAISO's Department of Market Monitoring).

Background:

The CAISO has observed that the fleet of units committed in real-time sometimes lacks sufficient ramping capability and flexibility to handle the 5-minute to 5-minute system load and supply variability. Sometimes the insufficient ramping capability manifests itself by triggering power balance violations, which means there is no feasible system wide real-time dispatch to maintain the supply and demand power balance.

According to the CAISO, in the case of power balance violations, undesirable outcomes include:

- The system has to rely on regulation services to resolve the issue in real-time after the imbalance has caused frequency deviation or area control error (ACE).
- When power balance is violated, the Real Time Dispatch (RTD) energy price is not determined by economic bids, but by administrative penalty prices. Administrative pricing creates market inefficiency in the long run and results in using the high penalty price for the imbalance energy of resources providing regulation services.
- If there is insufficient regulation service, the system must lean on the interconnection with other Balancing Authority Areas, potentially impacting the CAISO system to meet required operational performance criteria.

Since the new nodal market was implemented in 2009, the CAISO has had a multi-interval optimization in the unit commitment and dispatch process. The multi-interval optimization can look several intervals ahead to meet forecasted ramping needs. The flexible ramping product is to create ramping margin on top of the forecasted ramp between market intervals, thus reducing the frequency of power balance violations.

The CAISO's revised straw proposal for Flexible Ramping Products (FRP) is designed to develop market-based flexible ramping products to address the operational challenges of maintaining power balance in the real-time dispatch.

Detailed Comments:

1. Day-Ahead FRP Product Not Well Defined for 5-Minute Flexibility

The CAISO should clearly explain how the Day-Ahead FRP procurement would translate to Real Time FRP requirements. The CAISO should show how the Day-Ahead FRP procurement increases 5-minute flexibility.

There is significant concern that the Day-Ahead FRP procurement as defined will not adequately provide for Real-Time ramping flexibility. The mismatch between Day-Ahead and Real-Time requirements determination could lead to price spikes and market inefficiency. The CAISO thoroughly explaining how its proposal for Day-Ahead FRP procurement adequately positions the right resources at the right price for Real-Time flexibility will help address this concern. Otherwise, the CAISO should

revise its proposal to align the Day-Ahead FRP procurement with Real-Time procurement to ensure the right amount of resource availability.

2. Issues with Real-Time FRP Modeling in Advisory Intervals

The CAISO should clearly explain how the Real-Time FRP Model will function for advisory intervals, which could have a significant impact on flexible resource availability for the Real-Time binding interval and price formation.

It is important for stakeholders to understand the impact that modeling FRP requirements in future advisory intervals have on the efficiency of FRP commitments and uplift costs. The CAISO utilizes advisory intervals to position resources for later commitment. If modeling advisory intervals biases the commitment toward resources in future intervals, then it creates a risk that resources set up now for a future interval may not be the best resource for the binding dispatch interval. This could result in dispatch inefficiencies and uplift costs.

3. Regional FRP Modeling Not Defined

The CAISO revealed during the stakeholder call (12/11/14) and Market Surveillance Committee (12/16/14) meeting that it plans to procure FRP on a balancing authority area (BAA) level and allocate it regionally. Because it is unclear what the CAISO means by this, it should clarify what it means by regional allocation. This was the first introduction of this allocation proposal.

Regional allocation of FRP capacity adds a layer of complexity within the FRP policy design that the CAISO should define in detail to ensure that any intersection with other parts of tariff are appropriately considered. Flexible capacity requirements, including the newly implemented flexible resource adequacy requirements are assessed on a CAISO system-wide, not on a regional or local-area basis.

Allocating FRP more granularly than for flexible capacity requirements could result in additional costs allocated to LSEs that might be avoided if FRP were allocated on a system-wide, not regional, basis. Because it appears that this policy decision could have significant impacts on the FRP costs, stakeholders should be given ample time to review and discuss this part of the policy.

4. Clarify Determination of Penalty Price and Maximum Penalty Prices

The CAISO should clarify in greater detail, to remove the ongoing confusion, how minimum and maximum FRP penalty price is intended to work. The examples provided in the proposal need to expand on how the penalty price for violating the minimum requirement works in practice. The complexity of these moving parts in the FRP design represents another example of how a simulation environment in the design phase of market changes would benefit stakeholders.

Though the penalty price for the minimum FRP requirement is slightly less (e.g. \$250 for ancillary services (AS) versus \$247 for FRP) it is not clear what the impact will be on AS procurement. It appears there will be a natural tension between AS and FRP procurement. The FRP design should balance this tension to ensure that competition between AS and FRP does not undermine the availability of resources for each of these products.

5. Change Allocation of FRP Procurement Costs to Hourly Intertie Schedules to reflect beneficial Movement by Intertie Resources

The CAISO should modify its FRP cost allocation proposal to ensure that the impact of intertie imports/exports on the FRP procurement requirement is appropriately reflected and credited commensurate with their impact and cost causation principles.

Conclusion:

The Flexible Ramping Product initiative has many positive features and CPUC staff commends the CAISO and its staff for putting together a proposal for this very complex market feature. CPUC staff supports the general direction and concept of the proposal for FRP, except for the significant concerns persisting over the systematic differences in the determination of Day-Ahead and Real-Time demand curve requirements, modeling advisory intervals in Real-Time, impact of regional distribution of FRP procurement, effect of Penalty Prices, and the allocation of procurement costs to hourly intertie schedules.

Lastly, the stakeholder process should be extended to fully vet the regional allocation of FRP capacity.