Comments on Flexi-Ramp Product Second Revised Straw Proposal
Department of Market Monitoring
January 24, 2011

The Department of Market Monitoring appreciates the opportunity to review and comment on the ISO's Second Revised Straw Proposal for the Flexible Ramping Product. We have included comments on several newer aspects of the proposal, and also included prior comments on aspects that either have not changed or are not currently addressed by the ISO proposal. A summary of our comments for select items follows:

- ***Determining the Requirement:*** The proposal provides extra information and an example on requirements but is not specific regarding how the requirement will be determined. Proposal needs further clarification of how the requirement will be calculated, including identifying specific drivers of demand and to what extent the ramping capability of energy bids alone will count toward meeting the requirement.
- ***Real Time Release and Re-Procurement:*** Both release and re-procurement of flexible ramping occurs in RTD at the same time. Given that RTD does not commit units, potential infeasibility of flexible ramping in RTD is a concern. DMM recommends the ISO include more detail in the next proposal on how scarcity and related price impacts will be avoided in RTD.
- ***Market Power Mitigation:*** The issue of market power has been partially addressed in the proposal by an implicit must-offer rule. DMM still recommends a bid price cap not greater than $250/MW (the existing bid price cap for ancillary services), review of the competitiveness of supply of ramping product in real time, and the potential for increased day-ahead procurement.

Also included below are remaining DMM concerns regarding other remaining issues that were not fully addressed in the Second Revised Straw Proposal: FRP interaction with ancillary services, cost allocation, day-ahead procurement, and operator intervention. DMM still has concerns on such issues.

DMM looks forward to reviewing further developments on the flexible ramping product initiative, working closely with the ISO design team, and notes that existing market conditions and the newly-implemented flexible ramping constraint may provide additional empirical insight into some of the issues faced by the flexible ramping product.

Release and Re-Procurement of Release of Ramping Capacity in RTD

One of the significant changes of the latest proposal is that ISO will procure and settle flexible ramp in 5-minute RTD market. As flexible ramp is also cleared in RTPD market, RTD essentially releases and re-procures FRP at the same time. RTD has its own flexible ramping requirement (separate from the RTPD requirement). However, RTD cannot commit units to accommodate procurement of FRP. This highlights the importance of ensuring the RTD requirement is set (relative to the RTPD requirement) such that infeasibility does not occur in RTD, resulting in extremely high FRP and energy prices that cannot be resolved in RTD. This may happen due to higher FRP requirement and/or inter-temporal effects within in RTD. DMM understands that ISO does not expect RTD FRP infeasibility to occur frequently.

DMM encourages the ISO to give more details on how to mitigate potential infeasibility in RTD. DMM seeks clarification on whether the RTD requirement can be higher than RTPD requirement, how this will be dealt with, and the use and value of penalty prices for flexible ramping in RTD and RTPD. DMM also recognizes that reservation of FRP in the binding interval for subsequent non-binding intervals in RTD can have an impact on energy prices and requests further clarification on how this impact will be managed.

Day-ahead Procurement

DMM still has concerns on day-ahead procurement. We recognize that including the FRP procurement in the day-ahead co-optimization is appropriate in the context of accurately reflecting the cost of this reservation to other services. However we remain concerned about the feasibility of such reservations so far in advance of real time. In the current market that resources may have a significantly different output levels in real-time compared to their day-ahead schedule. This may lead to day ahead flexible ramp procurement that is unavailable in real time and result in frequent re-procurement in real time where options are more limited. For detailed explanations, please refer to DMM comments on Revised Straw Proposal.[1]

Interaction With Ancillary Services

The Revised Straw Proposal clarifies that procurement of flexible ramping product in both markets will be co-optimized with energy and ancillary services and that flexible ramping product capacity will be substitutable with non-contingent operating reserve from online resources. DMM requests additional clarification on the distinction between contingent and non-contingent operating reserve that will be made by the market software and whether or not this distinction will create separate prices for contingent and non-contingent versions of the same operating reserve product. DMM also raised this concern on the comment to Revised Straw Proposal.

Flex-Ramp Requirement

In our prior comments, DMM requested clarification on how calculation of the FRP requirement would account for the ramping capability inherent in the pool of energy bids so as to avoid procuring FRP when there is no additional ramping need beyond what was already available. The proposal notes that there will be a must offer requirement for FRP imposed on resources that have submitted energy bids, where proxy FRP bids will be submitted with bid price of $0/MW. This will have a similar effect as netting the inherent ramping capability from the calculated requirement. However, DMM notes that there is potential additional cost associated with this approach as all procured FRP will be paid the FRP price and procurement will be to a target requirement that may be artificially high. The original purpose of the flexible ramping procurement concept was to secure additional ramping capacity when there was an anticipated need. Procuring to a net requirement (anticipated need less ramping capability inherent in the pool of energy bids in RTD) is consistent with this purpose and would limit procurement and

[1] See DMM comments on Revised Straw Proposal at http://www.caiso.com/Documents/Department_MarketMonitoring_Comments_FlexibleRampingProductRevisedStrawProposal.pdf .

payment to additional ramping capacity required. DMM notes that procuring and paying to the gross requirement, including some of the natural ramping capability that is expected of the pool of real time energy bids, reflects a decoupling of ramping capability and energy provision from the imbalance energy bids and will likely compensate a larger pool of resources for ramping than is needed to cover the incremental (net) ramping requirement. While we do not object to this approach, we did want to highlight the conscious decision to decouple ramping capability from energy provision in compensation for a broader pool of imbalance bids than is needed to meet incremental imbalance ramping requirements.

A related issue is the regulatory feasibility and time required to implement a FRP must offer requirement. When such a requirement was contemplated for ancillary services, issues regarding existing Resource Adequacy contracts and potential grandfathering were relevant. It may be the case that such a requirement can be imposed on all resources (not just Resource Adequacy) that have bid into the real time market. DMM recommends that additional clarification regarding regulatory requirements beyond a tariff filing for imposing a must offer requirement on all or a subset of resources that have bid energy into the real time market.

Re-bidding and Settlement

DMM requests clarification as to how day-ahead awards will be reflected / protected in real-time. Will those with day-ahead awards be able to re-bid their award in real-time and if so, how will that be settled if different from existing methodology for settling ancillary services.

Cost Allocation

As stated in our prior comments, DMM opposes allocating FRP direct cost only to load and recommends an approach more in line with cost-causation principles. The ISO has indicated that there are other factors including inter-tie ramp, output deviation from generation and load (uninstructed or unanticipated), and operator adjustments that contribute to the requirement for flexible ramping product. DMM also suggests considering assigning a higher weight to more extreme contributions to uncertainty in the allocation of flexible ramping product cost. For detailed explanations, please refer to DMM comments on Revised Straw Proposal.

Operator Intervention

The issue of operator intervention, its impact on FRP and energy price, and how motivations for intervention can be reviewed and incorporated into the FRP requirement were not specifically addressed in the latest proposal. In practice, load biasing in HASP, RTPD, and RTD is not uncommon and may have a significant impact on short-term unit commitment, FRP awards and prices, as well as energy and ancillary service prices. DMM recommends that the ISO proposal include monitoring and feedback functions related to operator intervention both load biasing, FRP requirement biasing, and exceptional dispatch for ramping. DMM also recommends the ISO put in place manual adjustment procedures for determining appropriate levels of intervention. For more information, please refer to DMM comments on Revised Straw Proposal.

Market Power Mitigation

The proposal has an implicit must-offer rule indicating that a resource without explicit flexible ramping bid and with economic energy bid will be assumed to bid $0/MWh for flexible ramping. DMM believes this is important to ensure bid adequacy. To further prevent system market power, some level of bid cap is also desirable as it does currently with ancillary services. Since flexible ramp and spin reserve can be converted into each other, imposing a flexible ramp bid cap will have similar effects on ancillary service bid cap.

DMM still recommends a bid price cap not greater than $250/MW (the existing bid price cap for ancillary services). We also recommend a review of the performance of the existing flexible ramping constraint to assess if other measures are warranted. For instance, in the ancillary services market, potential market power is mitigated by the fact that 100 percent of the requirement is purchased in the day-ahead market, with minimal amounts purchased in real-time only when needed. In the day-ahead market, market power is limited by the fact that the entire pool of units can be scheduled to provide energy and ancillary services – including longer start units that may not already be committed.

In real-time, however, the pool of units that can provide FRP will be much more constrained. Since the day-ahead market optimization seeks to commit only enough units to meet projected demand, the supply of additional on-line capacity may be limited in real-time. In RTPD, the only additional capacity that may be committed are short start units (or, in some cases, additional capacity from transitioning a combined cycle unit modeled as a MSG to a higher configuration). This means that the potential for temporal market power in real-time in the FRP market is much higher.

While procuring a high percentage of FRP requirements in the day-ahead market may help mitigate this potential market power (as is the case with ancillary services), this approach may be problematic due to issues raised in the “Day-ahead Procurement” section above and suggests that more stringent real-time market power mitigation for FRP may be needed. The DMM will assess potential market power issues prior to and after implementation, and recommends that the ISO review the effectiveness of day-ahead procurement and potential for higher day-ahead procurement shortly after implementation.