Comments on Commitment Cost Enhancements Phase 3 Draft Final Proposal
Department of Market Monitoring
March 4, 2016

The Department of Market Monitoring (DMM) appreciates this opportunity to comment on the ISO's proposal for Commitment Cost Enhancements Phase 3.

DMM notes that this issue has now been addressed through a series of three different initiatives over the last three years, but has repeatedly been deferred due to the complexity of some implementation details and the controversial nature of some aspects of the proposal. DMM supports the ISO's effort to develop an opportunity costs adder and has worked closely with the ISO to provide detailed input into the design and implementation details of opportunity cost adders for start-up, minimum load and transition cost bids. However, DMM remains concerned that key implementation details which have not yet been addressed could have a major impact on the effectiveness of the rules and implementation of the tools outlined in the proposal.

DMM's specific concerns, addressed in further detail below, include (1) the proposed exemption for a subset of contractual limitations; (2) introduction of market based resource characteristics; (3) the reliance on a negotiated process for a large set of resources; (4) the proposed extension of the short term use-limited reached outage card; (5) the need for further testing of the optimization model; and (6) the proper role and criteria for determining major maintenance adders to directly incorporate incremental major maintenance costs into startup and minimum load bids.

Exemption for contractual limitations

The ISO proposal indicates that the ISO's primary concern with calculating opportunity costs on the basis of contractual limitations is the exercise of local market power. DMM is concerned that the ISO does not yet have the data necessary to assess the cumulative impact of all the contractual exemptions allowed under its proposal in terms of local market power. However, DMM's primary concerns about treating contractual limitations as the basis for opportunity costs (or for setting unit operating constraints) involve the cumulative impact of these exemptions on overall *market efficiency,* as well as the *flexibility* of the gas fleet on both a system-wide and locational basis,

First, DMM believes it is simply inefficient to treat *contractual limitations* as *physical limitations* in the ISO market optimization, whether these contractual provisions are treated directly as physical unit

operating constraints (e.g. starts per day) or indirectly through an opportunity cost adder. To the extent that these contractual limitations may reflect actual physical or environmental limits, it is more efficient and appropriate to incorporate these actual physical or environmental limits directly into unit operating constraints or opportunity cost bid adders. To the extent these contractual limitations may reflect the additional maintenance costs associated with starting up and operating a unit, it is more efficient to directly represent these incremental costs directly in startup and minimum load bids through Major Maintenance Adders (MMAs), as is intended under the ISO market design (See section below on *Major Maintenance Adders*).

Moreover, DMM does not believe that the robust regulatory process through which these contracts were approved could have included the information and analysis that would have been necessary to effectively assess the cumulative impact of including these contract limitations (in combination with actual physical and environmental constraints) on overall market efficiency, as well as the *flexibility* of the gas fleet on both a system-wide and locational basis. While providing exemptions for a very limited number of contracts may not have a significant detrimental impact on market efficiency, flexibility or potential market power, DMM is particularly concerned about the cumulative effects if exemptions are provided to a significant amount of capacity -- particularly if this includes a relatively large amount of capacity in transmission constrained areas.

DMM understands that the cumulative capacity eligible for contractual exemption under the ISO's proposal may fall between about 5,000 and 10,000 MW of gas capacity. Much of this capacity is located in transmission constrained areas. Some stakeholders are requesting that exemptions be applied to a broader range of resources – and for a longer period of time, such as the length of the contract.

Further, DMM does not believe that the regulatory process considered the cumulative impact of contractual use limitations on flexibility needs in transmission constrained areas. Resource adequacy requirements for procuring sufficient flexibility to meet two load ramps per day are only designed to meet system flexibility needs. These flexibility requirements do not assess whether sufficient starts are available under contract to meet the flexibility needs system wide and within each transmission constrained area. This is of particular concern as the ISO enters a period of significantly increased need for operational flexibility of the system's fleet of gas resources.

DMM also disagrees with the ISO's logic for concluding that opportunity cost bid adders based on contractual limits the ISO is proposing to exempt in this proposal could not create potential local market power concerns. DMM agrees that the contractual limits in question were not developed by IOUs and the CPUC in an attempt to exercise market power. However, it does not logically follow that modifying market rules to allow opportunity cost bid adders to be based on these limitations could not create local market power concerns. If a large amount of capacity in transmission constrained areas has high commitment costs due to opportunity cost adders due to contractual limits, this may exacerbate market power of <u>*other*</u> resources in these transmission constrained areas.

As noted in the ISO proposal, these contracts may have been completed prior to initial discussions of the ISO allowing opportunity costs for such limitations.[2] If that is indeed the case, the regulatory process through which these contracts were approved could not have included any consideration of the potential impacts that might result if these limitations were used to determine opportunity cost bid adders. In addition, DMM questions whether the CPUC and IOUs that were involved in this regulatory review process had the information and tools to effectively consider the cumulative impacts of these contract limitations on system efficiency, flexibility and local market power. Thus, DMM does not believe this regulatory review process provides a sufficient basis for allowing contractual limits to serve as the basis for opportunity costs.

DMM recognizes that the individual stakeholders that were parties to contracts that contain use limitations have argued that it is reasonable for the limitations in their contracts to be eligible for opportunity cost bid adders. However, DMM believes that allowing a substantial set of contractual limitations to be the basis for opportunity cost bid adders may not be in the collective interest of the overall ISO system and is simply inefficient. DMM also questions the equity of this approach for entities that do not have eligible contractual limitations.

DMM's ability to comment more specifically on the potential efficiency, flexibility and market power impacts of the proposal is limits by the very limited amount of information that the ISO appears to have developed to date on the amount of capacity and actual use limits for the units that would be eligible for opportunity cost bid adders under the ISO proposed criteria and exemptions. Under the ISO's proposal, it seems the actual amount and location of capacity eligible for exemptions – and the actual contractual limitations of these resources – will only be known with certainty after approval and implementation of the ISO's proposal. However, as noted above, DMM understands that the cumulative capacity eligible for contractual exemption under the ISO's proposal may fall between about 5,000 and 10,000 MW of gas capacity. This capacity would be *in addition* to capacity that may not be under such contracts, but have the type of actual environmental constraints that this initiative was originally designed to address.

In addition, DMM recommends that the ISO confirm the status of contractual limitations which are not being exempted under this draft final proposal. Parties to either renegotiated or new contracts should be aware that contractual limitations not exempted in this proposal will not be permitted as the basis for resource characteristic registration or opportunity cost calculation in the future. Providing transparency to both existing and new market participants, as well as the local regulatory authorities who approve some contracts, is a critical part of the ISO's role as the operator of an efficient market. In particular, DMM recommends that the ISO clarify the status of contracts for energy storage and other new and emerging technologies, as requested by multiple stakeholders.

[2] The ISO's goal of developing a way to incorporate opportunity costs in commitment cost bids actually dates back to 2010. See *Straw Proposal Changes to Bidding and Mitigation of Commitment Costs*, March 16, 2010, pp.7-8: http://www.caiso.com/Documents/StrawProposal-Changes-BiddingandMitigation-CommitmentCosts16-Mar-2010.pdf

Market based resource characteristics

The ISO's draft final proposal includes a provision that would allow registration of three market based resource characteristics: maximum daily starts, maximum daily transitions for multi-stage generating resources, and ramp rates.

Under the current ISO tariff, resource characteristics submitted to the ISO by market participants "shall be accurate and actually based on physical characteristics" as defined in tariff section 4.6.4:

> ***4.6.4 Identification Of Generating Units***
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> *Each Participating Generator shall provide data identifying each of its Generating Units and such information regarding the capacity and the operating characteristics of the Generating Unit as may be reasonably requested from time to time by the CAISO. All information provided to the CAISO regarding the operational and technical constraints in the Master File shall be accurate and actually based on physical characteristics of the resources except for the Pump Ramping Conversion Factor, which is configurable.*

DMM has previously expressed concern that the ISO does not have an adequate process for reviewing or validating unit characteristics entered into the Master File, and that participants may submit values that limit the availability and flexibility of resources based on economic preferences rather than actual technical unit characteristics.

The ISO's proposal seeks to address this issue by modifying the tariff to explicitly allow participants to enter two sets of Master File values: one based on actual physical characteristics, and another set of "market" characteristics based on the scheduling coordinator's preference for resource constraints to be used by the market software. Thus, the ISO's proposal is actually *lowering* (rather than increasing) current requirements for starts and transitions.

DMM is supportive of this approach as an alternative to the status quo if the necessary design and implementation details are further developed as part of the stakeholder process. Allowing participants to enter market characteristics on the basis of economic profit maximization or to simply minimize plant usage and wear and tear could promote physical withholding, allow gaming – and is simply inefficient. As previously noted, it is more efficient to directly represent the incremental maintenance costs associated with starting up and running a unit directly in startup and minimum load bids through Major Maintenance Adders (MMAs), as is intended under the ISO market design (See section below on *Major Maintenance Adders*). As a result, DMM believes it would be reasonable to set guidelines limiting the degree to which a unit's market characteristics could be more constrictive than their actual physical characteristics.

The ISO is proposing to limit market based values for maximum daily starts and maximum daily transitions to a minimum of two per day, with exceptions granted for resources with a single start or transition either due to design considerations or under limited circumstances at the discretion of the

ISO. DMM supports the minimum requirement for two daily starts and two transitions per MSG configuration as proposed by the ISO. The proposed market based resource characteristic offers flexibility to market participants that is not available under current tariff provisions. As the ISO's need for operational flexibility of the system's fleet of gas resources grows, so does the necessity of enforcing existing must offer requirements and resource characteristic registration requirements

In addition, the existing proposal indicates that this effort will be coordinated with other efforts effecting or based on resource requirements such as the reliability service initiative and other initiatives relating to resource adequacy. DMM believes this coordination is very important, and that this process should ensure that resources under resource adequacy obligations are clearly required to provide the capacity and flexibility to the market for which resource adequacy compensation or credit is being provided.

Reliance on negotiated opportunity cost

The ISO's proposal offers a negotiated opportunity cost option that DMM believes could end up being applicable for a large set of resources. The proposal specifies a process through which the scheduling coordinator and the ISO agree on an opportunity cost model to be run by the market participant who would then submit opportunity cost calculations to the ISO for use in the market on a schedule that is also part of the negotiation. DMM recommends that the proposed negotiation process be broad enough to include the calculation of a negotiated opportunity cost by either the ISO or the market participant. DMM also recommends that the ISO seek to minimize the need to rely on negotiated opportunity costs, since the process for determining an appropriate opportunity cost through negotiation is unclear and will require sufficient staff resources with the necessary expertise to support the process.

The proposed non-negotiated opportunity cost model would not allow modeling of the most common type of multi-stage generating resource, the combined cycle unit, which may have a start limit that counts transitions between configurations as a start. Under the ISO's proposal, these types of more complex resource constraints would need to be addressed through a special negotiated opportunity cost bid adder. Again, it is difficult to assess how widespread or problematic this situation might be given the lack of data on units and constraints that would be eligible under the proposed criteria and exemptions. However, DMM notes that this could conceivably represent a significant category of units requiring the ISO to establish special negotiated opportunity cost bid adders.

A resource that has a limited number of transitions does incur an opportunity cost for transitioning if the limitations or restrictions on its operation cannot be optimized by the appropriate ISO commitment process without allowance for opportunity costs. DMM has identified at least one MSG resource in the ISO for which this is currently the case, and there could be others. Adding an opportunity cost adder to the transition cost would allow the optimization to commit the configuration appropriately.

The CCE2 transition cost calculation methodology accommodates the addition of incremental transition opportunity costs. The opportunity cost for transitioning would be added to the start cost (or indicative start cost) of the "To configuration" and not to the "From configuration", so the transition cost, which is calculated as the difference, would include the opportunity cost of the transition. DMM suggests that an MSG transition opportunity cost model could be developed as a customization of the generic model and that the ISO invest in the development of such a model. Doing so would reduce the number of resources receiving a negotiated opportunity cost.

In addition, the ISO's proposal expands eligibility for negotiated opportunity costs to any "RA resource [which] is at risk of not being available for the entirety of its RA showing despite the commitment cost bids reflecting the calculated opportunity cost".[3] DMM is concerned that the proposed extension may apply to RA resources at risk of being unavailable due to a contractual limitation not approved by the ISO as the basis for opportunity cost calculation. If these resources are determined to be eligible for negotiated opportunity costs on this basis, the ISO should specify that negotiated opportunity costs must be based on approved limitations only.

Short term use-limited reached outage card

The Reliability Services Phase 1 Initiative first included the establishment of a *short-term use-limit reached outage card* in the addendum to the draft final proposal, but included the concept of a *non-environmental use-limit reached* outage card in earlier draft proposals of that initiative.[4] The addendum to the draft final proposal describes this outage as an option for use-limited resources to be exempt from the resource adequacy availability incentive mechanism in the period between the incentive mechanism implementation and opportunity cost methodology implementation. The ISO has continued discussion of the short term use-limited reached outage card in the final draft proposal of the current initiative.

As described in the current initiative, the short term use limit reached outage would be retained upon implementation of the opportunity cost methodology until "the ISO deems the opportunity cost methodology an effective tool to manage use-limited resources."[5] DMM suggests that extending the period of technical review, as requested by other stakeholders, is preferable to including an opportunity cost in market inputs paired with an outage card that would allow use-limited resources to be exempt from availability incentive mechanism penalties.

In addition, the proposed short-term use limited reached outage should include a clearly defined end date or condition, rather than relying on the need to file a tariff amendment at an unspecified later date

[3] Draft Final Proposal, pp. 36. http://www.caiso.com/Documents/DraftFinalProposal-CommitmentCostEnhancementsPhase3.pdf

[4] http://www.caiso.com/Documents/DraftFinalProposalAddendum-ReliabilityServices.pdf , pp. 4 and 47-48.

[5] http://www.caiso.com/Documents/DraftFinalProposal-CommitmentCostEnhancementsPhase3.pdf pp. 41.

to retire the outage card. Also, DMM recommends that the ISO establish defined conditions under which a "short-term use-limited reached outage" could be rejected by the ISO. DMM recognizes that this may sometimes require some customized analysis and judgement by the ISO. However, the analysis and judgement involved in this does not appear to be any more significant or difficult than that required to establish a "negotiated" opportunity cost adder for various resources – such as combined cycle MSG units – that will not be covered by the ISO's opportunity cost model.

The current proposal allows any use-limited resource to make use of the outage card, but suggests that reasonable use "should primarily be limited to cases where the opportunity cost has been ineffective and the resource is at risk of reaching the limitation prematurely even with bids reflecting the opportunity cost." DMM suggests that the ISO establish a clearly defined outage acceptance protocol, rather than perhaps relying on other options such as having to refer any "unreasonable" behavior to FERC as false information or manipulation. DMM believes this would be preferable for the ISO, as well as stakeholders who might be concerned about any such perceived risk.

Need for additional analysis and testing

DMM continues to caution that the methodology used to calculate the opportunity cost adders should be more clearly specified, analyzed and tested as part of the stakeholder process. As noted in the draft final proposal, stakeholders have requested that the ISO conduct additional testing of the model before implementation. The ISO has dismissed this request as unnecessary given the commitment to running an optimization model and to the commitment to provide a technical appendix. Although DMM supports both of those commitments, we recommend that the ISO continue to develop and test the opportunity cost model prior to filing the necessary tariff modifications at FERC.

DMM's ability to comment on a variety of modeling issues is also limited by the lack of information on the types of resources and actual use limits of units that would be eligible for opportunity cost bid adders under the ISO proposed criteria and exemptions. DMM continues to believe that more development and testing of the optimization model using such information would be highly beneficial.

Major maintenance adders

Major maintenance costs may be included in commitment costs if they are incremental to starts or run hours. Certain types of major maintenance costs are incurred infrequently and may appear to be fixed costs. However, if the maintenance frequency is driven by starting or running the resource, the major maintenance costs are marginal costs with respect to starting or running the unit. Excluding an MMA from commitment costs could lead to inefficient commitment or excessive cycling which could increase maintenance costs. This is not sufficient justification to add a penalty factor to MMAs above actual incremental major maintenance costs. Under the ISO's MMA process, maintenance agreements and other contracts may be submitted in support of major maintenance applications. However, MMAs

based on contracts will be validated and reviewed for reasonableness relative to historical data or estimates of *actual maintenance costs* through the ISO's MMA approval process. If the contract based value exceeds the ISO's estimated major maintenance cost for the unit, the ISO will approve the portion of the MMA that is estimated by the ISO to account for actual major maintenance.