Comments on Updated Straw Proposal
for Standard Resource Adequacy Capacity Product

CAISO Department of Market Monitoring
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Summary

The Department of Market Monitoring (DMM) recognizes the desirability of facilitating an efficient bilateral market for Resource Adequacy (RA) contracting by better defining specific attributes of RA as a "product", and incorporating more specific RA obligations in the CAISO tariff. The current stakeholder process of defining a Standard Capacity Product (SCP) provides an opportunity to enhance the definition of RA as a more standard product by implementing specific forced outage availability standards and related performance incentives in the CAISO tariff. DMM supports the general approach outlined in the straw proposal as a step forward in this area. Most importantly, the straw proposal is clearly designed to create a strong incentive for generating resources to minimize forced outages during peak hours, when the availability of these resources is most critical for ensuring that the key reliability and market goals of the RA program are achieved.

At the same time, DMM notes that the basic approach outlined in the straw proposal only addresses *forced outages* of RA resources within the CAISO, which are only one component of the overall availability of RA resources. For the substantial amount of RA capacity provided by imports and use-limited resources (including hydro, geothermal, QFs, other renewables and combustion turbines that are use-limited due to environmental permitting restrictions), additional standards and performance incentives may ultimately be needed in order to ensure that the basic reliability and market goals of the RA program are achieved. Such performance standards and incentives should consider the actual overall availability of these resources based on schedules and bids actually submitted into the CAISO markets. Once the Market Redesign and Technology Upgrade (MRTU) program is implemented, the actual market availability of these resources can be more meaningfully assessed based on RA resource schedules and bids in the integrated forward market (IFM), residual unit commitment (RUC) and real-time market (RTM). After MRTU has been in effect for some time (i.e., including the peak summer months), DMM believes that it will be important to re-assess the potential need for more general availability standards or incentives for RA resources based on actual market experience under MRTU.

DMM also suggests that the "product" represented by bilateral RA contracts may be better defined by clarifying or addressing some potential ambiguities or gaps in the current RA process and obligations outlined in the CAISO tariff, Business Practice Manual (BPM) and other RA program guidelines. DMM recognizes that addressing these potential ambiguities or gaps is beyond the scope and timeline of the SCP stakeholder process as it is currently defined. However, in the final section of these comments, DMM is providing a discussion of some examples of these potential ambiguities or gaps in order to highlight these issues for stakeholders, and to reinforce DMM's view that the forced outage performance provisions included in the CAISO's proposal should be viewed as an initial step toward enhancing and better defining RA capacity as a "product". Finally, DMM notes that any multi-year RA

contracts that are signed must continue to be subject to any changes made to the RA obligations incorporated in the CAISO tariff to enhance performance standard or clarify RA resource obligations.

The remaining sections of these comments are organized as follows:

- Section I provides more detailed comments on the specific aspects of the CAISO's straw proposal for forced outage availability standards and related performance incentives.
- Section II discusses issues relating to more comprehensive availability standards and performance incentives that may ultimately be established based on schedules and bids for all RA resources, including imports and use-limited resources (including hydro, geothermal, QFs, other renewables and combustion turbines that are use-limited due to environmental permitting restrictions).
- Section III provides a discussion of several potential ambiguities or gaps in the current RA program and obligations that DMM believes should be addressed as part of a longer term effort to enhancing and better defining RA capacity as a "product".

I. Forced Outage Availability Standards and Performance Incentives

DMM supports the general approach outlined in the straw proposal as a step forward in developing standards and related performance incentives for forced outages. Most importantly, the straw proposal focuses standards and related performance incentives on the 100 hours of each month that are most likely to be most critical in terms of reliability and market prices.[1] In combination with the proposed penalties, this should create a strong incentive for generating resources to minimize forced outages during hours when the availability of these resources is most critical for ensuring that the key reliability and market goals of the RA program are achieved.

DMM also supports the concept of using a target forced outage rate based on the historic performance of a fleet of RA units, as opposed to establishing targets for individual units based on each individual unit's past performance. Using a fleet-based availability target will provide an incentive for poorly performing units to improve their availability and will more closely align the availability target with the forced outage rate assumptions that went into developing the capacity procurement targets (i.e., 115% of peak demand).

DMM agrees that using availability data presently available in the CAISO SLIC system may be all that is practical in the short term. However, SLIC is currently primarily a tool for real-time operational reporting, and the current reporting requirements for SLIC may not mesh with using the data in SLIC for calculating performance metrics and incentive penalties and payments. Limitations to the data available in SLIC include the following:

- **Granularity of SLIC Data.** The straw proposal notes that outages of units smaller than 10 MW are not required to be reported to the CAISO through SLIC. However, DMM notes that availability reductions of over 10 MW are only required to be reported through SLIC to the

[1] 5 hours/day × ~5 weekdays/week × ~4 weeks/month ≅100 hours/month

extent that they are at least 10 MW and 5 percent of the unit's maximum capacity. Thus, in order to track actual *forced outage* rates on units over 10 MW, additional data to that reported to the CAISO in real-time through SLIC would be needed to calculate accurate *forced outage* rates. This issue is most acute for the numerous units that are about 50 MW or smaller. For these units, reductions of up to 10 MW (representing 20 percent or more of their capacity) are currently not required to be reported in SLIC.

- **Outage Classifications in SLIC.** The designation of an outage as a *scheduled outage* or a *forced outage* in SLIC is to a large part determined by timeframe in which the market participant notifies the CAISO of the outage, and is not necessarily determined by the cause of the outage or whether there was actually flexibility in the timeframe it could be taken. Over the long term, it could be desirable to modify the way outages are classified in SLIC to be more appropriate for the calculation of performance metrics.

DMM appreciates the desire of stakeholders to develop a SCP on a timeframe that would allow these provisions to be used in 2009 for contracting for the 2010 delivery year. However, DMM believes that the CAISO must retain the flexibility to continue to modify the SCP and the RA provisions of the CAISO tariff based on actual experience once MRTU is implemented. Based on DMM's experience with other performance standards and related financial penalties and charges, DMM notes that it is often appropriate to re-evaluate and modify initial performance standards and related penalties after such provisions have been in effect for some time. While it may be desirable to avoid such modifications in order to facilitate RA contracting by providing greater certainty about RA requirements, DMM believes that the possibility exists that such future modifications may be appropriate. Sections II and III of these comments provide a discussion of other aspects of the RA program and RA provisions of the CAISO tariff that DMM feels may need to be clarified or enhanced in the next few years. Thus, DMM recommends that the CAISO explicitly recognize that the *forced outage* availability standards and performance incentives incorporated in the straw proposal will be subject to review and potential modification in subsequent years, and that any multi-year RA contracts signed after these initial SCP features have been implemented will continue to be subject to any changes made in the SCP and RA obligations incorporated in the CAISO tariff.

As the straw proposal acknowledges, tracking *forced outage* rates for non-unit specific import resources is not feasible because the availability of these resources is not reported through SLIC. Moreover, DMM observes that *forced outage* rates are not necessarily applicable to import resources, since these resources may represent contractual commitments or constraints affecting delivery of energy at a particular tie point (e.g., availability of a portfolio of resources or transmission availability), rather than representing energy from a single physical resource. Consequently, DMM supports the concept in the straw proposal of basing the availability incentive and penalty for RA import resources on the hours that a resource is actually made available through bids submitted in the CAISO markets. As discussed in Sections II and III of these comments, this same approach (i.e., measuring performance based on schedules and bids actually offered in the CAISO markets during peak hours) may also be applicable in establishing performance standards (or NQC ratings) for other types of unit-specific RA resources (hydro, geothermal, QFs, other renewables and combustion turbines that are use-limited due to environmental permitting restrictions).

In developing any performance target, the number of hours that these import resources were scheduled in the pre-MRTU current market cannot be used to develop an MRTU target, because there is no mechanism in the current market for these resources to be bid into a central day ahead market if not scheduled bilaterally. Although generating unit *forced outage* rates are not really applicable to import resources, the same availability target that was developed based on the *forced outage* rate of the CAISO fleet of unit-specific RA resources could be used. Alternatively, the hours that an RA import resource is specified to be contractually available and as based on the California Public Utility Commission's (CPUC) RA capacity counting criteria could be used, as discussed in section III of these comments.

As described in the straw proposal, the standard capacity product should specify that an RA import must be bid under the CAISO "Resource ID" established for the RA resource. Considerations should be given to how the trading of these standard capacity product "tags" for imports would interact to each load-serving entity's (LSE) allocation of import capacity on the various tie points for imports to meet RA obligations (e.g., develop provisions that would apply if an RA import initially "tagged" as being deliverable over one tie-point was subsequently traded to another LSE).

In addition, it seems that it would be beneficial if the type of standard capacity product "tag" described in the straw proposal also include the CPUC "counting category" of the RA resource if it were utilized by CPUC jurisdictional LSEs to meet their RA obligation. Such a standard designation would facilitate trading of the tag between LSEs by allowing LSEs trading RA capacity to easily establish the counting criteria category that a resource is qualified for.

II. Actual Market Availability of RA Resources

As previously noted, the type of availability standards and performance incentives incorporated in the straw proposal for internal resources address only one aspect of resource availability: *forced outage rates*. For dispatchable unit-specific RA resources that are not use- or energy-limited (e.g. most gas-fired steam units and combustion turbines), forced outage rates represent the single most important aspect of RA resource availability, since these resources are subject to an all-hours must-offer requirement for all RA capacity that is not unavailable due to scheduled or forced outages (in fact the CAISO creates bids for these units if not submitted by the market participant).

However, for most other types of unit-specific RA resources (hydro, geothermal, QFs, other renewables and combustion turbines that are use-limited due to environmental permitting restrictions[2]), forced outage rates can represent only a relatively minor aspect of the resources' actual overall availability to the CAISO system. These "use-limited" units, which in total provide a substantial amount of RA capacity, are required to be bid into the CAISO markets only when their applicable limitation makes them available. These limitations are not usually considered forced outages that are reported in SLIC. Because the actual availability of these units to the CAISO system is based on whether a schedule or bid is submitted to the CAISO

[2] Based on requests for use-limited resource status under MRTU , over 1,000 MW of RA capacity may fall under this latter category (combustion turbines that are use-limited due to environmental permitting restrictions), with much of this being located in transmission constrained areas.

markets – rather than whether a unit is experiencing a forced outage – the availability standards and performance incentives for these resources should ultimately be based on the amount of schedules and bids actually submitted for these units.

This approach would be consistent with the basis of the approach evaluating the availability of import resources that was outlined in the straw proposal and mentioned above. One logical way to set performance standards for actual overall performance of use-limited RA resources would be to evaluate, in addition to *forced outage* rates, the hours for which market schedules and bids are actually submitted for these units. As discussed in more detail below, DMM believes the hours of availability incorporated in resources' use plans or in the CPUC "counting categories" used to classify resources' eligibility to meet an LSE's RA obligation might provide a logical framework for assessing actual availability of RA resources to the CAISO markets.

III. Other Potential RA Program Clarifications and Enhancements

Provided below are several potential ambiguities or gaps in the current RA program and obligations outlined in CAISO rules that DMM believes should be addressed as part of a longer term effort to enhancing and better defining RA capacity as a "product".

- **Currently, there is not a link between use-plans, or the CPUC "counting categories," and a resources' actual availability to the CAISO markets.** The CAISO tariff specifies that bids for use-limited RA resources are required to be submitted consistent with a resource's availability as laid out in annual use-plans submitted to the CAISO by the resource owner. In addition, CPUC jurisdictional LSEs are only allowed to meet their RA obligation with a maximum amount of resources in various categories defined by the "planned availability as expressed in hours available to run or operate per month" (i.e., use-limited, 160 hours, 340 hours, unlimited availability, etc.). It seems that any "tagging" system set up to track RA capacity should explicitly track use-limitations and the "counting category" in which the RA resource would be qualified to be listed in a CPUC-jurisdictional LSE's supply plan. Such standard information on use limitations would help facilitate efficient trading of the resource between LSEs, allowing LSEs trading RA capacity to establish the counting criteria category that a resource is qualified for.

  While the RA program appears to be based on the assumption that most RA resources will be available in the CAISO markets during most system peak hours, there are no specific performance standards to assess actual availability of these use-limited resources during peak hours. To ensure that the basic reliability and market goals of the RA program are met, more general availability standards might include explicit performance incentive to ensure that resources are actually made available by submitting schedules or bids consistent with the use plan or the counting category (or "bucket") in which an RA resource was qualified to provide RA capacity.

  Thus, RA program rules could further define what the term "planned availability" means, and what standards may be used to assess performance, and the consequences of any failure to meet any specific level of performance. DMM believes that it may be important to address

this issue once the CAISO has experience with the actual availability of RA resources in the IFM/RUC markets under MRTU, and can assess the impact of RA resource availability on these markets.

As an example of how performance incentives could incorporate the actual availability of use-limited resources, and not just *forced outage* rates, the performance metric could also evaluate the hours for which bids or schedules are actually submitted. For example, a generator might qualify to provide RA capacity in the CPUC's "Category 2 Bucket," which means it may only be available 160 hours in a month. This resource would have its availability evaluated based on whether bids were submitted to the CAISO market for at least 160 hours, as well as by evaluating the unit's *forced outage* rate.[3] In addition, criteria could be established to help ensure that bids and schedules are submitted for individual resources during hours when they are needed for the CAISO system as a whole or as consistent with the planned or expected availability of the LSE's overall mix of RA resources.

- **Obligations and characteristics of "use-limited" resources should be better defined than they are presently**. For example, there are many use-limited resources with a limited number of operating hours in a year (such as units with environmental permitting restrictions and hydro units). Rather than counting on market participants to bid these resources in the hours in which the resources are needed by the CAISO system, bids could be required for these resources in all hours (or all peak hours) pursuant to bidding protocols specifically approved by the CAISO as part of the unit's use plan.[4]

- **In some cases, it may be appropriate to establish performance incentives that consist of adjustments to a unit's qualifying capacity rather than financial penalties so that qualifying capacities reflect what is actually available from a unit.** As discussed above, many non-thermal resources may actually be available to the CAISO markets in peak hours at a lower value than is reflected in the NQC of the unit. In such cases, where a unit is routinely not fully available during peak hours, it may be appropriate to better align each unit's qualifying capacity with the capacity the unit can in reality provide by setting the unit's qualifying capacity to its actual availability and adjusting it up or down in future years based on actual performance.

- **Contractual Limitations on Resource Availability.** Another potential ambiguity or gap in current RA rules is whether (or the extent to which) *contractual limitations* should exempt RA resources from bidding into the CAISO markets. For example, while non energy-use limited RA resources have a must-offer obligation for all hours that resources are available, an entity may seek to sign an RA contract for capacity only during certain hours (e.g., peak

[3] Alternatively, availability could be evaluated against the available hours listed in the use-plan for the unit.

[4] For example, one approach would be to require that the unit bid into the IFM and RTM at a price that reflects the unit's "opportunity cost" of running only 876 hours per year. With this approach, the bid price would be set (and adjusted, if necessary) so that the unit's bid would not clear in more hours than the unit is available for, yet the unit would be sure to be bid-in when supplies are tight. Another approach that could be used for use-limited CTs would be to bid into the non-spin market as a price taker, and then select the "contingency" flag for the unit's real time energy bids associated with that non-spin capacity, so that the unit would only be dispatched for energy in the event of a contingency.

hours 7-22). While some such *contractual limitations* might be reasonable and not have a detrimental impact on reliability or markets, contractual limitations could undermine the RA process if such limitations were more restrictive and/or widespread. In the case of import resources, such contractual limitations might be reasonable to allow provided provisions are included to ensure capacity is available when needed including peak hours. In any case, rules concerning contractual limitations and how they relate to the must-offer requirement should be clarified to ensure a "level playing field" for all participants.