

Stakeholder Comments Template

RI Phase 2 – Day-of Market 7/6/11 Initial Straw Proposal

Submitted by	Company	Date Submitted
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1. Please provide any comments on the ISO’s proposed schedule, timeline, or process for this stakeholder process.

To accommodate the state’s transformative energy and environmental policies, the CAISO seeks to evolve its existing market structure to:

- Enable ISO operators to efficiently and reliably operate the grid with a more diverse and variable supply portfolio;
- Be flexible to accommodate future changes to energy policy goals and new resource types without requiring further substantial market changes; and
- Resolve known market and performance issues and minimize the need for manual interventions.¹

To accomplish these objectives, the CAISO articulated a schedule that seeks, in slightly less than four months, to identify and properly assess all necessary day-of, day-ahead, and possibly longer term forward capacity products and market enhancements necessary to reliably integrate renewable resources. Given this process’s long-term impacts on California’s energy markets, SDG&E suggests the schedule might be a tad aggressive. The goal of this proceeding is to define a roadmap for later work. Consequently, decisions made in this early stage are foundational: Solutions and issues not identified or addressed now will necessarily fall outside the scope of later work in this initiative. It is, therefore, important to identify gaps in the existing market design, and fully address and vet potential solutions. Towards this end, SDG&E suggests the CAISO build additional time or additional flexibility into the proposed schedule.

2. Are there additional goals or operational challenges that the ISO should be addressing through this stakeholder process?

¹ CAISO Renewable Integration Market Vision & Roadmap: Day-of Market, Initial Straw Proposal. July 6, 2011 at p. 2-3.

SDG&E supports PG&E's suggestion to create a matrix comparing how other organized markets have addressed issues under review in this process. The CAISO's characterization that California is often on the "bleeding edge" of renewable integration issues does not acknowledge that other markets are currently addressing challenges associated with incorporating both renewables and new resource technologies. Their proposals and actions may provide valuable input to the CAISO's process, and if nothing else, will provide stakeholders with important context to evaluate the CAISO's proposed solutions here.

For example, PJM is considering innovative revisions to its existing regulation market structure to provide incentives for resources to provide faster, more accurate regulation services. Importantly, despite increased variability caused by renewable penetration, PJM believes the revisions will reduce the overall need for regulation service due to the enhanced quality of the resources providing regulation. Similarly, PJM anticipates the revisions will help facilitate growth in alternative technology resources (batteries, flywheels, etc.) capable of near instantaneous responses to control signals.

It appears (see response to Question 8, below) the CAISO is attempting to produce results similar to what PJM anticipates through the CAISO's proposed Real Time Imbalance Service (RTIS). SDG&E suggests stakeholders would benefit from a side-by-side comparison of both the products currently offered in each ISO/RTO's day-of markets, and any proposed enhancements to those products.

3. Please indicate whether your organization agrees with the guiding principles listed in the straw proposal. If not, please indicate why not. If you would like to have other guiding principles added, please describe those additional principles.

The CAISO has outlined six guiding principles to assess the merits of any market enhancement, service or products that emerge from this process. The guiding principles will serve as touch points, and are designed to ensure that outcomes are: 1) technology agnostic, 2) transparent, 3) deep and liquid, 4) durable and sustainable, 5) flexible and scalable, and 6) cost-effective and implementable.

To this list, SDG&E recommends adding a seventh guiding principle designed to specifically address cost-causation and cost-allocation issues. This guiding principle would state that to the extent possible and practical, parties or entities responsible for variability on the system should be allocated the costs incurred to address that variability and maintain reliable operations. SDG&E strongly believes that each market participant should be assigned costs imposed on the grid due to that participant's performance. Such a cost-causation paradigm places the incentive to mitigate variability squarely on the entity responsible for that variability.

SDG&E flatly rejects the logic expressed by some stakeholders in this proceeding that there is little value in assessing variability costs to variable resources in the first instance, since these resources will simply assign these costs back to load in their long term contract negotiations. These stakeholders argue that because load ultimately pays in all instances, it is a waste of time and effort to assign variability costs to market participants. These arguments overlook the importance of incentives in properly functioning market designs. With correct cost-causation and

cost-allocation principles in place, entities incurring higher costs associated with variability will seek solutions to manage that variability, thereby making their products more attractive to load serving entities with whom they will seek to negotiate Purchase Power Agreements (PPAs). Resource technologies that are unable to manage variability, or who can only manage variability with high-cost solutions, will be less successful in securing PPAs with load serving entities than resources and technologies able to provide lower cost solutions. Thus, with properly aligned incentives, the market itself will help identify low cost, reliable technologies, and help investors decide which technologies (storage, wind, solar PV, solar thermal, etc) to add to the grid. The best outcomes are unlikely if the current method of assigning the costs of resource variability only to loads is continued. Efficiency requires that the entities responsible for variability are directly assigned the costs of that variability. Note that nothing prevents the owners of variable resources from transferring the cost responsibility for variability to a load serving entity through a PPA. Of course, this would only happen if the overall balance of benefits and burdens in the PPA is acceptable to the load serving entity.

Finally, SDG&E believes that implementing procedures here that allocate costs to market participants on the basis of each market participant's contribution to variability, will help to prevent anomalous results in other proceedings. For example, to ensure it has sufficient operational flexibility to continue integrating increasing volumes of variable energy resources, the CAISO recently proposed significant modifications to the CPUC's Resource Adequacy (RA) program. The modifications ask the CPUC to direct LSEs to purchase capacity with specific characteristics, including start up times, energy ramp rates in time frames needed for load-following, and regulation-certified capacity in its month-ahead procurement filings. The CAISO argues it could then utilize these RA resources to manage variability caused by intermittent resources.

Rather than simply saddling LSEs with the cost of intermittent variation, SDG&E advocates creating a workable mechanism for identifying and allocating the costs of variability in the instant CAISO stakeholder process. Once such a mechanism emerges, there would be no reason to force a particular pattern of procurement decisions for resources with specific operating characteristics on load serving entities. In addition to the cost allocation concerns, The CAISO's proposal in the CPUC's RA proceeding would force load serving entities to make procurement decisions that pre-judge the most efficient way for those load serving entities to manage the variability that their particular load and supply portfolios create. For example, one load serving entity might find that securing combined cycle capacity with the ability to follow 1-minute dispatch instructions and that would be offered or self-scheduled into the CAISO's proposed 1-minute market, would be an effective way to manage its exposure to the allocation of variability costs. Another might find that its variability costs would be better managed by allowing the CAISO to arrange the necessary integration services through its 1-minute and regulation markets and then paying the CAISO for the load serving entity's allocated share of the costs incurred in those markets. SDG&E believes each load serving entity should have the flexibility to decide how best to manage the variability inherent in its particular load and supply portfolio.

The CAISO's proposal in the CPUC's RA proceeding would simply extend the current practice of "peanut buttering" all variability costs to load serving entities. This practice contradicts efficient cost-causation, cost allocation, and incentive principles. Accordingly, SDG&E urges the CAISO to add cost-causation and allocation issues as a guiding principle here to avoid incongruous outcomes results in other proceedings.

4. Please provide your organization's views on any incremental ancillary services you believe are necessary to accommodate the intermittency of renewable resources.

SDG&E appreciates the question, but believes stakeholder views on incremental ancillary services necessary to accommodate renewable intermittency should be largely secondary to the *actual* ancillary service needs identified in the CAISO's recent 20 and 33% integration studies. The CAISO dedicated significant time, money and effort studying and identifying specific challenges and specific needs to address various levels of renewable integration. For example, the preliminary results of the 33% integration study identified a need for roughly 1250 MW of regulation capacity and 4000 MW of load following capacity. The specific ancillary service needs identified to address renewable intermittency should be guiding this process forward. To this end, SDG&E would like to see a closer, more identifiable and express correlation between the proposals made in the instant process and the CAISO's integration study results.

5. Does your organization believe that Residual Unit Commitment should be performed more granularly than daily (i.e. on-demand RUC)? Is on-demand RUC needed if the 15 minute unit commitment, either in RTED (Option A) or RTPD (Option B) looks forward 8-10 hours?

The obvious concern of extending the STUC horizon from 5 to 10 hours is that the increase in uplift costs would exceed the benefits of a higher supply of capacity available for dispatch in the real-time market. SDG&E believes that this option could certainly be a viable component within RIMPR, but would require analysis to determine if the benefits are likely to outweigh the costs.

6. Please provide your organization's views on replacing today's Hour Ahead Scheduling Process (HASP) for inter-ties with a simpler method that would not involve establishing separate hourly prices for the inter-ties and that would not include bid cost recovery. Please suggest proposals concerning what accommodations are necessary at the inter-ties to provide scheduling flexibility for western market entities.

SDG&E believes a re-design of the HASP for inter-ties is needed *immediately* to eliminate the root cause of extremely costly RTIEO-related uplift charges unfairly allocated to load (averaging over \$10 million per month since MRTU go-live). The financial magnitude of this problem is so great it should not take a back seat to any other initiative, or be addressed as component of a separate initiative such as the RIMPR2. Further, the RIMPR2 initiative is far-reaching and complex enough that final approval could be delayed significantly beyond the current schedule. Meanwhile, load would continue to unfairly pay millions of dollars in RTIEO uplift costs each month. SDG&E seeks a market design solution to be implemented as soon as possible. The CAISO and stakeholders should obviously attempt to make such a solution adaptable to RIMPR requirements, but this should not be the primary consideration in fixing a market problem of this magnitude. Even if RIMPR2 modifies the immediate solution to the RTIEO uplift issue, the

immediate solution would still be effective for years until RIMPR2 is implemented, saving hundreds of millions in unnecessary costs.

7. Does your organization prefer a two settlement market or a three settlement market? Please describe why.

SDG&E prefers a two-settlement market.

8. Please provide your organization's feedback on the concept of a 1 minute Real Time Imbalance Service (RTIS).

There appear to be two distinct aspects to the RTIS proposal. First, through RTIS the CAISO is seeking to create two new and separate ancillary service products: one for regulation resources that can respond quickly and accurately, and another for other more traditional resources that can respond to regulation instructions, only on a slower, less accurate basis. Resources would elect which service they would like to provide, and each market service would be priced differently based on the amount that the CAISO requires of each service and the offered capacity prices for each service.

The second aspect of RTIS is to serve as a measuring stick for calculating the costs of variability on the system. The CAISO argues that the services provided through RTIS are a fairly precise measure of what the CAISO paid to secure services to manage variability that arises in real-time as a result of market participants' usage or production differing from what they scheduled in real-time. That is, the costs of variability could be precisely determined through RTIS costs, and precisely assigned to market participants based on the deviations between each participant's real-time schedule and metered usage or production. Deviation incurs costs, and the party causing the deviation – be it load, traditional generation, or renewable generation – will be assigned those costs. In this way, all variability is treated the same, and market participants causing the variability are similarly treated the same.

At this point, SDG&E supports and appreciates the cost allocation principles imbedded in the RTIS proposal, but seeks additional information or examples of how RTIS would interact with or replace existing ancillary service products. SDG&E agrees that while the *costs* of variability could be precisely determined, SDG&E is unclear as to how the *cause* of the variability can be precisely measured and thereby assigned to each market participant based on its actual contribution to variability. As SDG&E understands, large segments of market participants (e.g., loads, QFs, run-of-river hydro) are not metered at the 1-minute and regulation (second-to-second) time intervals. Consequently, RTIS may raise metering and telemetry issues, and possibly necessitate significant investment in metering infrastructure. SDG&E asks the CAISO to opine on the implications of its proposal on metering requirements, both for loads and generators. At what time interval can each market participant's variability actually be determined?

SDG&E seeks answers to these questions as well as some basic cost/benefit analysis before supporting or opposing RTIS.

- a. Does your organization agree that with RTIS, regulation should be changed to a bi-directional service?
 - b. Is one minute the correct dispatch interval for RTIS?
 - c. How should RTIS be bid, selected, and dispatched? Should a mileage bid be used for dispatch with a market clearing mileage price determined each minute?
 - d. Does your organization's opinion on RTIS differ depending on whether Option A or Option B is chosen?
9. Please comment on your organization's preference for Option A or Option B with regard to the real time market. If neither option is feasible in your view, please provide input on how the real time market should be configured.

SDG&E supports Option A.

- a. Would 15 minute real time prices enable price responsive demand or demand response?

Currently most demand response is activated outside the CAISO market processes and therefore should be adaptable to either Option A or B.

- b. In Option A, with 15 minute RTED, what is your organization's opinion about a 10 minute ramp period?

SDG&E believes that a 15 minute ramp may have merit in simplifying the relationship between resource dispatches and real-time awards, similar to today's convention of generators ramping from one 5-minute ADS DOT to the next over a five minute period. SDG&E believes additional technical information and discussion from the CAISO is needed to decide on the best ramp period. Clearly ramp conventions are necessary and there are likely economic efficiencies in selecting a certain ramp period over another.

10. How often should renewable resources be allowed to schedule?

- a. In Option A does every 15 minutes make sense?

Yes. The same scheduling requirement should apply to all resources, including imports and exports.

- b. In Option B should renewable generation be able to schedule every 5 minutes, 15 minutes, or some other time interval?

SDG&E supports Option A in which schedules would be determined every 15 minutes.

- c. Does it make sense to limit this scheduling opportunity to only renewable resources, or should it apply more generally? Who should be able to schedule more granularly than hourly?

The scheduling timeframe should apply to all loads and resources, including imports and exports. Further, market participants should be able to update bids and offers as well as schedules for a sub-hourly scheduling interval, since bids and offers can be dependent on the scheduled quantity.

11. Please provide any other comments your organization would like the CAISO to consider through this initiative

At page 27 the CAISO states that they propose not to change the current allocation of regulation capacity costs, i.e., they would continue to be allocated 100% to loads. The CAISO argues that “very short term fluctuations...are due to customers turning on and off appliances.” The reality is that very short term fluctuations are due to both loads changing their consumption as well as generators changing their output. To imply that generator output does not fluctuate on a very short term basis, is just not right. Regulation capacity costs should be allocated on the basis of variability, just like the costs of the CAISO’s proposed Real Time Imbalance Service (RTIS).