

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE
STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding Policies and Protocols for Demand Response, Load Impact Estimates, Cost-Effectiveness Methodologies, Megawatt Goals and Alignment with California Independent System Operator Market Design Protocols

Rulemaking R.07-01-041
(January 25, 2007)

**COMMENTS OF
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR
ON GOALS, PURSUANT TO ASSIGNED COMMISSIONER'S AND
ADMINISTRATIVE LAW JUDGE'S RULING REVISING PHASE 2
ACTIVITIES AND SCHEDULE**

The Assigned Commissioner's and Administrative Law Judge's Ruling Revising Phase 2 Activities and Schedule, dated October 1, 2007 (the "Ruling"), asked the parties to submit comments and responsive goal proposals regarding the Energy Division Staff Proposal entitled "Energy Division's Proposed Demand Response Goals."¹ Pursuant to the Ruling, the California Independent System Operator Corporation ("CAISO") submits the following comments:

I. Introduction

The CAISO commends the Commission's Energy Division for the time and effort it has taken to propose demand response goals that will enable demand response resources to tangibly contribute to grid reliability and to enable the full value and capability of demand response resources to be realized. Further, the CAISO is encouraged by the Commission's foresight that "[i]n developing these goals, the Commission will consider the CAISO's need for accurate information on the amount and

¹ (hereinafter, the "Staff Proposal"). After the Ruling was issued, the date for submitting comments to the Staff Proposal was extended to November 26, 2007.

conditions for availability of DR in order to incorporate DR into its market design, forecasting and procurement.”² This perspective and the overall goals as proposed in the Ruling align with the CAISO’s guiding vision for demand response which is that the CAISO will actively work with regulators, utilities and other stakeholders to realize the full value of demand response resources in California’s electricity markets and to incorporate demand response resources into the reliable operation of California’s electric system.

The CAISO is pleased with the overall direction of the proposed goals and the preliminary vision that the Staff Proposal conveys. The challenge that we face is to try to understand the vision for demand response in its entirety and the future paradigm that will exist for how demand response resources will be sourced and utilized. Not clearly knowing this makes commenting on certain aspects of the goals challenging. Even so, the CAISO appreciates the progress made to date and values the opportunity to provide the following constructive comments and/or clarification in accordance with the topical elements as outlined in the Ruling’s attached Staff Proposal.

II. Comments to Staff Proposal Topics

A. [Staff Proposal Section] IV. Participation of Demand Response in the Wholesale Market

The Role of CAISO and MRTU

Participating Load is that set of demand response resources that are large enough (one MW or more from single or aggregate sources).... (p. A-8)

CAISO Clarification:

Since the drafting of Energy Division’s Staff Proposal on demand response goals, pending further analysis of impacts on other CAISO systems, the CAISO is proposing that Participating Load be able to participate down to 0.1 MW, versus the originally

² Ruling at Section 1 [*Scope of Phase 2*], page 2.

conveyed minimum participation level of 1.0 MW. This should enable greater participation from demand response resources by lowering, if not eliminating, the minimum size impediment.

The CAISO envisions three broad categories of demand response. Demand response that: 1) reduces the Load Forecast, 2) provides reliability services to the CAISO, and 3) is strictly emergency responsive. (p. A-8)

CAISO Comment

There is an effort at the national level to standardize the definitions and categorization of demand response resources. Below is a set of demand response categories that have been discussed at the ISO/RTO Council (“IRC”), and have been submitted to the North American Electric Reliability Council’s (“NERC”) DSM Task Force for consideration:

- Capacity – demand-side resource displaces or augments generation for resource adequacy; penalties are assessed for noncompliance
- Ancillary services – demand-side resource displaces generation deployed as operating reserves and/or regulation; penalties are assessed for noncompliance
- Energy Price – demand-side resource bids to curtail load for scheduling or dispatch and displaces generation resources; penalties are assessed for noncompliance
- Energy Voluntary – demand-side resource curtails voluntarily when offered the opportunity to do so for compensation, but noncompliance is not penalized

California may want to consider adopting this or a similar convention, on a going forward basis, to guide future DR program development and aide in messaging and customer communication.

B. [Staff Report Section] V. Energy Division Proposes the Following Demand Response Goals;

Customers as Demand Response Resource

Customers should also have the ability to access information on current market conditions and energy prices, forecasted market prices of energy for the day-ahead market on an hourly basis. This same interface should allow the customer to set up personalized protocols for direct load control options utilizing customer purchased technology add-ons or utilization of Home Area Network functionality. (p. A-10)

CAISO Comment:

The CAISO strongly supports this notion of providing customers with timely market prices and system condition information to make appropriate energy-use decisions. Under MRTU, the CAISO will publish, on its OASIS Website, among other data, hourly Day-ahead energy and ancillary service prices. In addition, the CAISO will publish real-time market *advisory prices*, 30 minutes before the beginning of each hourly real-time market, for each 15-minute interval within the hour, as well as the current Real Time cost of energy, i.e. the market clearing price for energy for each 5-minute dispatch interval. The ability to design simple to sophisticated AutoDR and direct load control schemes, for example, will be enabled and supported by the depth and breadth of market price and system condition information that the CAISO will make available and easily accessible to customers.

Send the Proper Market Signal to Demand Response Participants

Assuming that the anticipated implementation of Scarcity Pricing does not slip, retail demand response programs would need to be properly installed by 2009 so that customers can respond to Scarcity Pricing. Misalignment of retail demand response programs and Scarcity Pricing would be detrimental to market functionality and California's ratepayers. (p. A-13)

CAISO Comment:

Demand response resources could be appropriately configured so that they prevent the triggering of reserve scarcity pricing.³ For instance, price-responsive DR could prevent reserve scarcity pricing from triggering in the CAISO's real-time markets, by lowering the demand forecast and, correspondingly, the amount of incremental Ancillary Services ("A/S") that are needed to meet CAISO system operating requirements to support that load. (This is because the amount of ancillary services needed to support the system is proportional to the amount of demand on the system.) Likewise, Participating Loads (aka dispatchable demand response resources) that are capable of offering non-spinning reserves (and possibly other ancillary services in the future) to the CAISO would add depth to the A/S markets and could help prevent a reserve deficiency, and therefore the triggering of reserve scarcity pricing.

On the other hand, emergency-triggered demand response programs are misaligned, based on the very nature of these programs. Emergency-triggered DR programs cannot act as a tool to mitigate the potential for scarcity pricing with respect to reserves. This is because the emergency must happen first: The CAISO must already be in a reserve shortage situation before the CAISO can call on the emergency DR resources.⁴ Accordingly, the emergency-triggered DR programs cannot prevent reserve scarcity pricing from triggering in the day-ahead or real-time markets. These emergency-triggered DR programs are useful to mitigate the emergency (i.e. as an alternative to load

³ Additional information about the CAISO's proposed Reserve Scarcity Pricing Design can be found at: <http://www.aiso.com/1bef/1bef12b9b420b0.html>.

⁴ Emergency Notices specifically relating to deficiencies in Regulation or Operating Reserve are issued by the ISO based on the level of severity:

- **Stage One:** Actual or anticipated Operating Reserves are less than the WECC Minimum Operating Reliability Criteria (typically between 6-7%);
- **Stage Two:** Actual or anticipated Operating Reserves are less than or equal to five percent (5%);
- **Stage Three:** Actual or anticipated Spinning Reserves are less than or equal to the Spinning Reserve Requirement defined in the WECC Minimum Operating Reliability Criteria (typically between 1.5% and 3%). Reserve scarcity pricing will be triggered if the CAISO has to declare a Stage 1, 2 or 3 emergency.

shedding), but not useful in the forward or real time markets to reduce demand or operate as a generation resource substitute for the provision of ancillary services.

Explore Wholesale Market Participation by Demand Response Providers and Small Aggregated Load

Modifying the role of aggregators from IOU contractors to CAISO wholesale market participants would be a major change for the California energy market. The CPUC, in collaboration with the CAISO, should begin a process of exploring the implications of the change and whether and how the change will be successful. (p. A-13)

CAISO Comment:

The CAISO supports the Commission in its desire to explore the idea of modifying the role of the third-party aggregator and believes there could be significant innovation, advancement and production of demand response resources through competitive procurement. As the Commission points out, the model for the “Curtailment Service Provider” already exists and has been demonstrated as workable in the eastern ISOs. However, the CAISO also agrees that there will need to be detailed discussions about appropriate policies, settlements and rules, as well as a transition plan should the Commission move in this direction. The CAISO looks forward to working with the Commission and other stakeholders on this important issue.

Grid Enhancement for Enabling Demand Response

Grid enhancements have the capability to better enable demand response resources. For example, demand response resources that can be called by load aggregation point will be an asset to the state, the IOUs, demand response providers and overall grid reliability. ... Over the next few years information should be collected by the IOUs about demand response resources by load aggregation point which could lead to the ability to call on these resources in specific areas to relieve congestion, high prices and avoid rolling blackouts. (p. A-15)

CAISO Clarification:

The CAISO supports all aspects and the desires expressed in this section. However, the CAISO believes that the author meant to refer to demand response at a location, i.e. at the nodal level or at a Custom LAP (an aggregation of nodes) versus at the “Load Aggregation Point” (“LAP”) as it was written. Reliability and financial benefits accrue when demand response resources can impact the grid at the local level, for example, in a transmission constrained load pocket. On the other hand, the LAPs, as defined, effectively represent the transmission areas of PG&E, SCE and SDGE. As the author intended, for demand response resources to be considered and benefit future grid planning studies, detailed and specific data, including locational aspects and impacts of these resources on the grid, will be necessary.

C. [Staff Proposal Section] VI. Energy Division’s Proposed Demand Response Goals and Milestones for Goal Attainment

Customers as a Demand Response Resource

Create retail tariffs/programs for all customers, including residential and small commercial customers, which incorporate proper market signals, aligned with wholesale market prices, which create incentives for smart energy usage. Proper tools for participation should be made available at the least possible cost to the customer. (p. A-16)

CAISO Comment:

The Commission should state that the purpose of this goal to create clear and consistent tariffs and DR programs that are structured to offer products that are useful to the CAISO for maintaining reliability and for integrating seamlessly into the wholesale electricity markets, similar to how DR programs are structured in the East. For example,

DR programs would have to deliver products that fit into in one or more of the following categories:

- Capacity – demand response resource displaces or augments generation for resource adequacy; penalties are assessed for noncompliance;
- Ancillary services – demand response resource displaces generation deployed as operating reserves and/or regulation; penalties are assessed for noncompliance;
- Energy Price – demand response resource bids to curtail load for scheduling or dispatch and displaces generation resources; penalties are assessed for noncompliance;
- Energy Voluntary – demand response resource curtails voluntarily when offered the opportunity to do so for compensation, but noncompliance is not penalized.

In addition, the CAISO urges that the proceeding include as a milestone goal, a standardization of the set of program offerings across the IOUs, and minimization of the number of various programs, to avoid customer confusion and reduce administrative burden and cost.

Finally, reporting of program performance to the CPUC should be consistent in presentation, format, basis and content for the IOUs with the CAISO being a designated recipient of these reports.

Develop a load impact protocol that measures the demand response attributable to load reduction which may be a result of dynamic pricing. (p. A-17)

CAISO Comment:

The CAISO believes an additional goal and milestone must be incorporated which is to develop an “operational load impact protocol” that is developed in collaboration with the CAISO that applies to the participation of demand response resources in the wholesale electricity markets on a Day-ahead and/or real-time basis and on a locational basis.

Send the Proper Market Signal to Demand Response Participants

Demand response resources will respond to price signals sent by the wholesale market.
(p. A-18)

CAISO Comment:

The stated goal is “Demand response resources will respond to price signals sent by the wholesale market.” The CAISO agrees with the intent of this goal and encourages its development; however, practically speaking, the CAISO believes that for this goal to be achievable and effective, it must be more tightly integrated with AutoDR technology and auto-response capability and should be revised accordingly.

Grid Enhancement for Enabling Demand Response

Enable demand response resources to be called by load aggregation point or greater specificity. (p. A-19)

CAISO Clarification:

The CAISO suggests the goal could be stated as follows:

Demand response resources are to be callable, including measurable and verifiable, by location, including at a node, custom LAP (aggregation of nodes) or within a transmission constrained local area.

D. [Staff Proposal Section] VII. Additional Questions for Parties to Address

1. Should the Commission develop new quantitative demand response goal(s)?
 - a. If quantitative goals are adopted should it be program specific and/or utility specific?

CAISO Comment:

The CAISO believes it should be program specific if the existing paradigm exists (see answer to “1.C” below) with utilities continuing to develop and market demand

response programs. If this is the case, the CAISO encourages DR programs be developed in a clear and consistent manner with the same set of program offerings across the utilities. In this manner, program performance, effectiveness, implementation and costs could be more easily compared and contrasted across the utilities.

b. Should a quantitative goal be calculated as a percentage of a benchmark (such as system peak demand) or some other means?

CAISO Comment:

See answer to “1.C” below. As a general matter, goals based on a reduction to system peak and tied to actual performance would be reasonable for the interim. At some point, perhaps a market performance based goal or goal component would be desirable should an appropriate and agreed-to methodology be developed.

c. Who should propose the goal, the CPUC, the CEC, the CAISO, the LSE’s or another third party?

CAISO Comment:

The answer to this begs the more fundamental question- what will the DR paradigm be going forward? Not clearly knowing this makes setting goals somewhat challenging since the CAISO believes part of the vision is clear, but not entirely. For example, to answer the question posed of who should propose the goal, it would be important to understand:

- If DR is to be a competitively procured resource, then a goal is somewhat immaterial since the total amount of DR is the amount that is economically sustainable in the marketplace.
- If DR is ultimately to be integrated into the Renewable Portfolio Standards, then the goal is established as a public policy objective.
- If DR is to be a set of programs and tariffs developed and implemented largely by utilities, as it is today, then the goals are appropriately established by the CPUC.

d. What programs should be considered for goal setting?

3. Assuming that there is enabling technology, what are the pros and cons of allowing programs such as AC cycling to participate in both ancillary service and emergency service CAISO programs?

CAISO Comment:

The CAISO's primary concern in this circumstance is that the expectations and requirements associated with the reliability product being sold to the CAISO, e.g. non-spinning reserve, are met and delivered without influence of conflicting priorities. The CAISO will financially settle for the delivered reliability service and how the CPUC ultimately treats the settlement is the CPUC's prerogative.

4. How often should goals be revisited?

CAISO Comment:

The current program cycle seems reasonable for now under the existing paradigm.

6. Should the Commission establish a goal of reducing the number of demand response programs/tariffs options to reduce potential customer confusion?

CAISO Comment:

Yes. Please see answer under "C. VI. Energy Division's Proposed Demand Response Goals and Milestones for Goal Attainment - *Customers as a Demand Response Resource.*"

III. Conclusion

The CAISO believes the Commission has not only outlined a set of worthwhile goals for demand response, but, importantly, has begun to cast a vision for how demand response resources should be thought of and developed in the future. The CAISO looks forward to working with the Commission and stakeholders to develop that longer-term vision for demand response resources and is eager to work with Energy Division staff and

stakeholders on the important next step of assembling the roadmap and timeline for accomplishing the important and immediate objectives necessary to achieve these goals.

Dated: November 26, 2007

Respectfully submitted,

CALIFORNIA INDEPENDENT SYSTEM
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Baldassaro "Bill" Di Capo, Esq., Counsel

By: */s/ Baldassaro "Bill" Di Capo //*

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CERTIFICATE OF SERVICE

I hereby certify that on November 26, 2007. I served on the parties listed on the Service List for Proceeding R.07-01-041, by electronic mail, a copy of the foregoing Comments of the California Independent System Operator on Goals, Pursuant to Assigned Commissioner's and Administrative Law Judge's Ruling Revising Phase 2 Activities and Schedule.

Executed on November 26, 2007 at
Folsom, California

--/s/-- Melissa Hicks

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