BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Integrate and Refine Procurement Policies and Consider Long Term Procurement Plans	Rulemaking 12-03-014 (Filed March 22, 2012)

COMMENTS OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION ON WORKSHOP TOPICS

On September 7, 2012, the Commission held a joint workshop for the LTPP proceeding (R.12-03-014) and the energy storage proceeding (R.10-12-007) to explore possible participation by preferred resources in the LTPP Tracks 1 and 2 utility resource solicitations. In a September 14, 2012, ALJ ruling, the Commission posed a series of questions about the workshop topic and solicited comments and reply comments. The California Independent System Operation Corporation (ISO) attended the workshop and also presented testimony in Track 1 on these subjects. Consistent with the schedule for comments, the ISO hereby submits responses to the questions and comments on procurement procedures for Track I and Track II resources needs.

I. Introduction

The ISO is pleased that the Commission is pursuing the formal integration of preferred resources into utility procurement practices.[1] The ISO supports integrating preferred resources into non-discriminatory, long-term resource procurement solicitations.

The ISO understands the "comparability" and competitive procurement challenges of resources, which on the surface appear to be apples and oranges. However, in the end, all energy

[1] Integrating preferred resources into utility procurement practices is also aligned with and supports California's Energy Action Plan where an identified key action is to "require that all cost-effective energy efficiency is integrated into utilities' resource plans on an equal basis with supply-side resource options." EAPII at p. 3.

resources must cost-effectively, efficiently, and reliably serve consumer energy needs and satisfy system reliability. Reliably serving consumers means resources supply (or dependably offset the need for) energy in the right amount at the right time and in the right place. So even though conventional and preferred resources may be structurally different, the energy service and reliability they must provide is ultimately the same. For instance, dispatchable resources, like demand response and storage, must help balance supply and demand, and non-dispatchable resources, like energy efficiency or behind the meter generation, must eliminate demand that would otherwise have to be balanced with supply. In the end, all resources, regardless of size, configuration, or type must fundamentally deliver the operating characteristics that can measurably support grid reliability by helping to balance supply and demand or by eliminating the need to do so.

II. Preferred Resources under the Loading Order

The Loading Order, as specified in the Energy Action Policy II (EAP), describes a policy priority for satisfying increasing energy needs in California with preferred resources:

> *EAP II continues the strong support for the loading order – endorsed by Governor Schwarzenegger – that describes the priority sequence for actions to address increasing energy needs. The loading order identifies energy efficiency and demand response as the State's preferred means of meeting growing energy needs. After cost-effective efficiency and demand response, we rely on renewable sources of power and distributed generation, such as combined heat and power applications. To the extent efficiency, demand response, renewable resources, and distributed generation are unable to satisfy increasing energy and capacity needs, we support clean and efficient fossil-fired generation.* [2]

[2] Energy Action Plan II, September 21, 2005, pg. 2 (emphasis added). This document is posted to the CPUC's Web Site at http://www.energy.ca.gov/energy_action_plan/2005-09-21_EAP2_FINAL.PDF.

The Commission must ensure that investments in preferred resources provide ratepayers with the same level of reliability and security as the traditional resources they offset. This requires a procurement process that enables robust competition among a portfolio of resources that can assuredly replace the operating characteristics of traditional generating units. The ISO supports the EAP Loading Order; however, the policy must be pursued in the spirit of maintaining or enhancing system reliability. Replacement of conventional generation resources with large amounts of operationally inferior and or very use-limited resources could compromise reliability and quickly jeopardize public trust and safety. Thus, the Commission needs to ensure that the procurement process produces an adequate mix of resources (preferred and conventional) that in aggregate provide safe and reliable energy service.

III. Responses to Specific Workshop Questions

CPUC Question 3:

> What specific characteristics or attributes must any resource -- including demand-side, energy storage, or distributed -- provide in order to meet future procurement needs? In the absence of a Net Qualifying Capacity, what methodology should be used to determine a proxy capacity value for resources lacking a Net Qualifying Capacity for use in LCR capacity accounting? How can these characteristics or criteria be turned into criteria to evaluate resources bid into a Request for Offers to meet LCR or other needs? How should those criteria be weighted?

Answer:

To identify the specific characteristics a resource must provide to meet future procurement needs, it is important to first distinguish between resource types, which the ISO distinguishes here as dispatchable and non-dispatchable resources.

Dispatchable resources are those resources that are integrated into the ISO market, can follow schedules and or are available to receive and respond to dispatch instructions from the ISO when and where needed; non-dispatchable resources are not. For instance, energy

efficiency is non-dispatchable, i.e. the ISO cannot instruct this resource when and where it is needed and it would not provide hourly schedules to the ISO. However, this does not mean that energy efficiency is not a valuable resource capable of offsetting generation procurement and counting as resource adequacy capacity. First, energy efficiency "delivers" its value by removing the potential for higher consumption 8,760 hours per year, somewhat analogous to a base load resource. Second, by permanently reducing demand, energy efficiency represents load that no longer has to be served, balanced, or backed by operating reserves; it is a measurable and provable load reduction.[3] Thus, integrating committed, performance-based energy efficiency in long-term procurement practices is a worthwhile pursuit supported by the ISO, and, in this configuration, should be eligible to offset both system and local area capacity needs.[4]

Dispatchable resources, like event-based demand response, storage devices, and certain distributed generators, require greater scrutiny as eligible LTPP resources. At minimum, dispatchable resources must provide energy when and where needed, and for how much is needed to balance the grid and maintain system stability based on ISO instructions and or submitted schedules. Fundamentally, dispatchable resources are the backbone of system reliability; without dispatchable resources, the ISO would be unable to balance supply and demand. Given the criticality of dispatchable resources, they must be able to follow explicit dispatch instructions and or schedules. Thus, understanding the operating characteristics of

[3] When classifying eligible capacity resources, it is important to distinguish non-dispatchable resources, like energy efficiency, which can offer guaranteed load reductions, from rates and tariffs. Dynamic rates and tariffs could be characterized as non-dispatchable, but classification of rates and tariffs as capacity-eligible and or preferred resources is not appropriate when the "obligation" is merely a voluntary response to price signals. Dynamic rates and tariffs can modify the underlying load, creating value by favorably "bending" the load growth curve, slowing down peak demand growth, and shifting energy to non-peak or low consumption hours. Although valuable in their own right, there is no reason to consider rates and tariffs as long-term capacity resources in this or other LTPP proceedings. In other words, a utility would never buy a rate or tariff under a long-term contract and call that an eligible capacity resource.

[4] The lifecycle of committed energy efficiency measures, including issues around degradation and durability, must be further addressed should committed energy efficiency be incorporated as a supply-side resource into the LTPP process.

dispatchable resources is imperative to effectively and efficiently manage the grid using dispatchable resources.

Dispatchable resource operating characteristics are best described as follows:

- How fast and slow a resource can ramp up or down;
- How long a resource can sustain an upward or downward ramp;
- How quickly a resource can change its ramp direction;
- How far a resource can reduce output and not encounter emissions or operating limitations;
- How quickly a resource can start; and
- How frequently a resource can be cycled on and off.

How fast and far a resource can move, and how nimble and unrestricted a resource is based on the above operating characteristics, is a strong indication of how "flexible" the resource is. In other words, the ability for a resource to move up and down quickly and without limitations is highly desirable, especially as the system adds large numbers of intermittent, non-dispatchable resources.

As illustrated by the operating characteristics listed above, the more flexible the future fleet, the more secure the future grid. If the system grows more dynamic and variable because of, for example, increasing the RPS to say forty-percent, then planning the development of flexible resources enables the system to absorb greater than expected variability. In contrast, a plan that develops less flexible resources is less prepared to absorb greater than expected variability. It is an asymmetric risk since a more flexible fleet can absorb greater variability, but a less flexible fleet cannot. Procuring more flexible rather than less flexible resources is especially critical in local capacity areas where predictable, guaranteed, and fast resource response is essential to mitigate a local transmission contingency in a local area in accordance with NERC and WECC operating reliability standards.

CPUC Question 4:

What are the pros and cons of the following procurement methods with regard to: 1) local procurement considered in Track 1 of LTPP, and 2) operational flexibility and general system procurement considered in Track 2 of LTPP?

A. Continuation of current practices for procurement with minor clarifications;

Answer:

Given the focus in these comments on preferred resources, the ISO believes that continuing the current procurement practices of programmatic resource development and goal setting is not conducive to the Commission's desire to integrate preferred resources into the long-term procurement process for system and local capacity. Developing preferred resources through largely non-competitive, programmatic cycles spurs little innovation or competition, which is needed for preferred resources to offset conventional generating resources and sell capacity competitively through RFOs. For example, innovation has come slowly under the existing programmatic paradigm. Even though advocated by the ISO through previous demand response program cycles, it has taken several years under the existing utility program paradigm for a share of utility demand response programs to be "dispatchable" geographically and when needed by the ISO. Ultimately, the goal should be to develop preferred resources, like demand response and energy efficiency, through competitive, non-discriminatory resource solicitations.

B. A "portfolio approach" that allocates, based on strategic/portfolio considerations, the total quantity of new flexible resources among various eligible resources (for example, how could/should the allocations be adjusted periodically based on current or expected conditions?).

   a. *SCE provided two proposed alternatives to filling any LCR need at the September 7, 2012 workshop, one with flexibility for SCE in procuring resources via two separate tracks, and another approach using an all-source RFO. Is there some way to blend these approaches? If so, how, and should the Commission attempt to do so?*

Answer:

The ISO is not entirely clear about the meaning of "a 'portfolio approach' that allocates based on strategic/portfolio considerations." The grid requires particular operating characteristics from a portfolio of supply resources to maintain reliability and system stability. If "strategic considerations" means the procurement of preferred resources over conventional resources, then that is the prerogative of the state and its energy policies. However, strategic considerations must align with the physics of the electrical system and satisfy mandated operating reliability standards. The ISO strongly supports the inclusion of preferred resources in a non-discriminatory, competitive RFO process, provided they are capable and contractually committed to provide the energy and operating characteristics for which they were procured. If preferred resources cannot provide the necessary operating characteristics for which they were procured, then the system will be deficient and less reliable. Thus, the ISO favors a long-term procurement approach that aligns more with SCE's objective criteria or "all-source" approach for both local requirements and general system and flexibility needs. The objective criteria approach is where energy resources of all types must compete to meet a set of operating characteristics and standards that satisfy specific energy service and reliability needs. In the end, the portfolio of preferred resources and conventional resources must ensure the reliability of the bulk power system and give consumers the same or better reliable energy service as provided by traditional resources over the years.

C. Establishing a set of minimum criteria for operational flexibility characteristics for all acquired resources;

Answer:

Establishing minimum flexibility characteristics for all acquired resources is not necessary since not every resource in a portfolio must be flexible. Energy efficiency, for

example, is not technically flexible yet still provides ratepayer value by permanently reducing load and displacing the need for generation resources. Moreover, there will still be a need for base load and peaking resources. Certainly a fair number of resources must be flexible and the overall fleet, in aggregate, must be capable of satisfying flexible capacity requirements, which the ISO has defined as the ability of the fleet to provide regulation, load following, and maximum continuous ramping.[5] Thus, resource procurement should consider the range of operating needs and the right mix of resources that can fulfill these needs.

There is one operating characteristic that should be considered when procuring all new dispatchable generation resources and that is PMin (minimum load). PMin is the minimum normal energy producing capability of a resource, i.e. the lowest operating level a resource can sustain and still be dispatchable. The ability to minimize PMin is highly beneficial for reliability and minimizing cost as the ISO anticipates periods of significant over-generation with increasing amounts of energy served by intermittent resources. Lower PMins will help minimize over-generation and the potential for high negative prices where market participants (and ultimately consumers) pay to have excess energy consumed or exported. Minimizing minimum load as an operating characteristic is an important consideration in future procurement solicitations for dispatchable generation resources.

[5] The ISO has previously defined flexibility as the ability of resources, and the overall fleet, to provide maximum continuous ramping, load following, and regulation. Maximum continuous ramping is the megawatt amount the net load (load minus wind and solar) is expected to change in either an upward or a downward direction continuously in a given month. Load following is the ramping capability of a resource to match the maximum megawatts by which the net load is expected to change in either an upward or downward direction and is expected to vary by month. Regulation is the capability of a generating unit to automatically respond during an intra-dispatch interval to the ISO's four-second automatic generation control signal to adjust its output to maintain system frequency and tie line load with neighboring balancing area authorities. Additional details about these three attributes can be found in the ISO's 2013 *Flexible Capacity Procurement Requirement- Supplemental Information to Proposal* filed March 2, 2012 in CPUC proceeding R.11-10-023.

D. A "strong showing" requirement that the utility must demonstrate that its procurement process was substantially open to all resource types and appropriately considered all of the values discussed above and that the resulting portfolio of resources is an optimal solution.

Answer:

A strong showing should be the long-term policy goal of the Commission, to enable all resource types to compete and be evaluated on a level playing field for future capacity needs. Market competition is the best way to spur the innovation needed to drive new resource types to develop and deliver the operating characteristics needed to support system reliability and consumer energy service needs.

CPUC Question 6:

At the September 7th workshop, both SCE and Enernoc raised concerns that it would be difficult to procure demand response resources that match the online dates (2017 to 2020) and duration (e.g., 20 years) of the conventional generation that is being contemplated as a source of LCR capacity. How could a demand side program be authorized through this LCR procurement process that delivers an on-line date and a duration that is comparable to conventional generation? What additional values are currently attributed to demand response resources in other markets that are currently not accounted for in California, and that might be taken into account as part of an LCR procurement process?

Answer:

Ten or twenty-year procurement contracts are uncharted territory for the nascent demand response industry. Given demand response is tied to the willingness of customers to participate, it may be too risky for a demand response provider to commit to a long-term contract if its customer base is equally unwilling to commit to load reductions 10 to 20-years in the future. Thus, long-term demand response contracts could prove to be a difficult business proposition given the nature of the resource and its unique dependence on end-use customers.

What we do see today is demand response providers engaging in mid-term (3 to 5 year) forward capacity contracts in the eastern ISOs and RTOs. The ISO would expect that demand

response would be a strong competitor in an all-source RFOs here in California, similar to the success demand response has had bidding in the eastern capacity markets. Assuming demand response has the opportunity to compete for mid-term capacity needs, and it exhibits operating characteristics that support reliability standards as ISO integrated resources, these resources should be eligible to provide both system and flexible resource adequacy capacity.[6]

In local capacity areas, the ISO can support the procurement of very fast (at least a 15-minute response time) automated and/or direct load control demand response. An example is air conditioning cycling that has direct control and requires no or limited operator intervention. Traditionally configured demand response programs are not a right fit for satisfying local capacity needs. The ISO believes it would be imprudent to allow traditionally configured, slower responding and voluntary demand response programs to count as local capacity. The reason is that local capacity areas are established because they have limited transmission import capability and depend heavily on the embedded resources in the local area for energy provision and security. In other words, local capacity areas must rely on the generating resources within the local area to serve the energy needs and to timely resolve any transmission contingency in that area within 30-minutes per NERC and WECC reliability standards.

For example, the operating reliability standards give the ISO 30-minutes to resolve a transmission contingency.[7] For demand response, this means the actual load reduction must occur within at least 15-minutes. By current standards, a "fast" 30-minute demand response program would not be sufficiently responsive to address a transmission contingency since the ISO and the other neighboring balancing area authorities cannot wait for the full 30-minutes to

[6] The ISO supports a quantity of committed, ISO integrated demand response be eligible to provide flexible capacity since demand response can reduce load, freeing up flexible capacity on other conventional resources.
[7] See NERC: TOP-004 (R4) http://www.nerc.com/files/TOP-004-2.pdf and WECC: TOP-007 (R2) http://www.wecc.biz/library/Documentation%20Categorization%20Files/Regional%20Standards/TOP-007-WECC-1.pdf

see if the needed load relief actually materializes; the problem must be fully resolved in 30-minutes. In addition, demand response programs that are not under direct or automated load control require set-up and communication time on the operator and customer side, which can take 10 minutes according to IOU demand response program managers. Thus, even a "very fast" 15-minute program would, in reality, equate to a 25-minute program before full load shedding occurs when factoring in all operator actions.[8] Thus, relying on demand response programs that have restricted availability and, if not under direct control, response times that are generally not compatible with the time allotted to resolve transmission contingencies, would be imprudent.[9] Direct load control and fast automated demand response programs are the types of demand response resources that most compatible resources for procurement in local capacity areas, assuming they are integrated into the ISO market and can be appropriately accounted for and dispatched by the ISO to meet system needs.

In the end, procurement portfolios that include demand response and other preferred resources that offset the procurement of conventional generators must, in aggregate, provide safe and reliable energy service that addresses all identified needs (system, local, flexibility) and compliance with applicable reliability standards. Thus, to best advance the state's preferred loading order, and to engender a spirit of competition and innovation needed to preserve the reliability and security of the grid, the ISO believes the Commission's policy should be to enable preferred resources, like demand response, to compete on level terms driven by service reliability needs and required operating needs. This includes firm in-service dates, contracted capacity

[8] Direct load control programs such as air conditioning cycling, pump cycling, underfrequency load shedding or fast AutoDR would be more appropriate demand response resources to address a transmission contingency.
[9] The ISO's concern about procuring long-term DR to meet local needs does NOT extend to committed long-term energy efficiency. The ISO believes that a permanent and measurable reduction in load in a local area resulting from committed EE will effectively reduce the resource requirements in that area.

amounts, performance obligations, and other relevant features needed to participate in competitive, long-term procurement processes for system capacity, flexible and local capacity.

Respectfully submitted,

By: *<u>/s/ Judith B. Sanders</u>*
Nancy Saracino
General Counsel
Anthony Ivancovich
Assistant General Counsel
Judith B. Sanders
Senior Counsel
California Independent System
Operator Corporation
250 Outcropping Way
Folsom, CA 95630
Tel: (916) 608-7143
Fax: (916) 608-7222
jsanders@caiso.com

Attorneys for the California Independent System
Operator Corporation

October 9, 2012