BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking To Enhance the Role of Demand Response in Meeting the State's Resource Planning Needs and Operational Requirements.	Rulemaking 13-09-011 (Filed September 13, 2013)

RESPONSE OF THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION TO THE PHASE 2 FOUNDATIONAL QUESTIONS

The California Independent System Operator Corporation (the ISO) hereby files these responses to the set of foundational issues raised in Attachment One of the Joint Assigned Commissioner and Administrative Law Judge ruling and Scoping Memo dated November 14, 2013.

I. INTRODUCTION

On September 25, 2013, the California Public Utilities Commission issued Rulemaking 13-09-011 to, among other things, enhance the role of demand response in meeting the State's resource planning needs and operational requirements. The rulemaking structured a four phase approach. Phase two was designed to address foundational policy questions. In these responses, the Commission seeks guidance from parties on the DR OIR's phase two foundational policy questions, which include bifurcation, cost allocation, and the treatment of backup generation as a demand response resource. In these comments, the ISO addresses two of the three foundational issues - bifurcation and cost allocation. To provide necessary context and detail, the ISO answers the questions posed in attachment one to the ruling and scoping memo using a narrative versus question and answer style.

II. ISO RESPONSE TO THE FOUNDATIONAL ISSUE OF BIFURCATION

The ISO strongly supports the policy to clearly define and categorize demand response programs as either demand-side or supply-side resources. The ISO largely agrees with the description and distinction the CPUC provided for the two types of demand response described in attachment one at page 1.

The ISO believes that demand response can only be classified in these two ways. Demand response is either 1) a demand-side, or 2) a supply-side resource. If a program does not fit into one of these two categories, then its value and ability to fulfill the intent of the loading order is dubious. To meet California's clean energy future, new resource types must either 1) reduce the need for conventional resources by reducing the amount of net load[1] that must be served, or 2) act as a supply-side substitute that can replace conventional generation and transmission assets to serve and balance load.

Importantly, and as incorrectly professed by other parties, the distinction between demand-side and supply-side demand response is not simply whether the demand response program is a "retail" or a "wholesale" program. Such a distinction has no real meaning in the context of why the state promotes and funds demand response programs under an avoided capacity cost construct. The Commission's over-arching purpose for authorizing ratepayer funding of demand response and energy efficiency

[1] The ISO refers to net load, which is the load minus the output from intermittent renewable resources, such as wind and solar resources. The net load must be met at all times throughout the year, including during traditional peak load times and when net load variability and volatility is greatest.

programs is to fulfill the loading order. The over-arching purpose of the loading order is to avoid or defer the need to build new conventional-generation resources and transmission and distribution infrastructure, and by so doing, reduce greenhouse gas emissions. The ISO's description of the basic purposes of demand-side and supply-side demand response, set forth above, fully aligns with the driving principle of the loading order.

A. Bifurcation policies have reliability consequences

Before drawing any finer distinction between supply-side and demand-side demand response and how they are defined, it is first necessary to understand the implications such classification has on reliability. First and foremost, transmission owners and the ISO have a responsibility to ensure that all load can be reliably served by meeting mandatory standards. NERC's transmission planning standard states that as a planning authority, the ISO must periodically perform system simulations and assessments to ensure that reliable systems are developed to meet NERC performance requirements. NERC Transmission Planning Standard TPL-001-0.1— System Performance Under Normal (No Contingency) Conditions (Category A) — states:

> The Planning Authority and Transmission Planner shall each demonstrate through a valid assessment that its portion of the interconnected transmission system is planned such that, with all transmission facilities in service and with normal (pre-contingency) operating procedures in effect, the Network can be operated to supply projected customer demands and projected Firm (non-recallable reserved) Transmission Services at all Demand levels over the range of forecast system demands, under the conditions defined in Category A of Table I.[2]

[2] Table 1 can be found in the NERC transmission planning standard on page 4 of 5 here: http://www.nerc.com/_layouts/PrintStandard.aspx?standardnumber=TPL-001-0.1&title=System Performance Under Normal (No Contingency) Conditions (Category A)

So why is this planning standard important to the issue of bifurcation and ensuring reliability? Because for demand-side demand response, no new future supply resources or transmission assets will be planned and developed to serve the load that was responsible for reducing the peak demand. Long-term procurement and resource adequacy requirements will be based on a lower load forecast given consistent demand reducing actions. It is as if the load associated with these demand-side actions no longer exists from a planning perspective. Thus, demand-side actions, particularly on a gigawatt scale, must be durable, consistent, and predictable since over time, the load-serving infrastructure will no longer be available to support this load should the demand response fail to respond and, instead, expect to be served. This has implications on the durability of "programs," which, in the future, must consistently deliver demand-side actions year- after-year because the system will no longer be built or maintained to serve "all" load. Instead, it will be built and maintained to serve the reshaped load profile and the lower peak demand that results from the consistent use of demand-side demand response. Given this effect, it is critical that supply-side and demand-side resources are defined and categorized so that they can be planned and accounted for properly.

B. Demand-side demand response definition

With this important background on the long-term benefit and burden of demand-side actions on system resources and infrastructure, fundamentally a demand-side resource is a resource that reshapes the net load curve. If done properly, it either decreases the absolute peak load and or it intentionally and favorably reshapes the overall net load profile; a profile that, relative to what it would have been but for demand-side actions, ends up being less steep, less deep and results in a lower peak. In other words, these demand-side actions create a flatter net load shape that requires fewer peaking and fast ramping resources and mitigates over-generation concerns.

In planning and procurement processes, the effect from demand-side actions is captured in the amount of net load to be served, which impacts future load forecasts. For instance, as effective demand-side actions start to favorably reshape the overall net load curve and reduce peak demand, the ISO's, CEC's, and IOU's load forecasting engines will capture the new load shape, resulting in a lower, flatter load than what would have been forecast but for consistent demand-side actions taken. If the demand-side programs are as effective as their intended design, then they will, for example, reduce the peak demand, which will reduce resource adequacy needs and requirements the following year, and long-term procurement needs over time.

Thus, there is a direct cause and effect tied to the efficacy of demand-side actions and the associated resource adequacy value from demand-side resources. For instance, if a demand-side program is effective at reducing the system peak load, then the result is a lower resource adequacy requirement and, therefore, fewer resources need to be procured. It is this direct cause and effect that fulfills the spirit of the loading order. Demonstrably slowing or reducing the resource adequacy requirement year-after-year provides a clear assessment of how effective demand-side resources are at avoiding or deferring the need for conventional generation resources and new transmission and distribution infrastructure. As explained earlier, this is both the benefit and burden entrusted to demand-side demand response. It reduces overall resource and infrastructure needs, yet over time the system will no longer be built or maintained to serve the underlying load associated with sustaining these peak demand reducing actions. Thus, the load reducing capability must be durable, consistent, and predictable. With this background, the ISO offers additional definition about the nature of supply-side and demand-side demand response.

C. Supply-side demand response definition

A supply-side resource is a resource that can be scheduled and dispatched when needed, where needed, and for a megawatt amount needed. A similar descriptor of these attributes is "right place, right time, right amount." In other words, supply-side demand response resources have the ability to remove a specified amount of energy demand from the grid at a given time and place to serve the power flow needs of the grid. It is this capability that distinguishes supply-side from demand-side demand response. A demand-side program, such as a critical peak pricing tariff or a load conservation messaging program may be able to satisfy one of these attributes, but not all. For instance, such a demand-side program may be callable at a certain time or during certain system condition, but the resulting demand response is through voluntary and behavioral actions, which are results that are not easily targeted or managed to provide a specific megawatt relief in a specific area. The actions taken by consumers simply reshape and modify energy demand. Another key aspect of supply-side demand response is that it is configured as a supply-comparable resource whose attributes can be modeled and optimized along-side other resource types, ensuring a feasible and efficient dispatch, power flow, and market outcome. Conversely, demand-side resources cannot be directly modeled or optimized; their effect is embedded in the natural, underlying load. It is this actual load that is then served through the optimized dispatch of supply-side resources, including supply-side demand response resources.

D. Important distinctions between supply-side and demand-side demand response

To further hone the distinction between supply-side and demand-side demand response, it is important to understand how this classification impacts forecasting processes and planning and procurement practices.

1. Forecasting

For forecasting purposes, there is a very distinct difference in the treatment of supply-side and demand-side demand response. Supply-side demand response load impacts are actually added-back into the CEC's raw load forecast so that the actual load, unaffected by supply-side demand response load impacts, can be determined. Ultimately, this adjusted load forecast is used for resource adequacy and long-term procurement requirements and needs; it is not skewed by supply-side demand response actions.

Conversely, the anticipated load impact from demand-side demand response is not "added-back" into the CEC load forecast. Not adjusting the CEC's load forecast for demand-side load impacts ensures that the unadulterated load reshaping benefits of demand-side resources are fully and properly reflected in the load forecast. Unlike supply-side demand response, whose load impacts are "added back," demand-side load impacts have a profound effect on planning future resource and infrastructure needs, especially when demand-side actions consistently lower or slow the growth of peak demand.

2. Planning and procurement

For planning and procurement purposes, supply-side demand response is counted and treated as other supply-side resources that contribute to satisfying a load-serving entity's load-serving needs and resource adequacy requirements. Having the CEC add back the load impacts from supply-side demand response into the load forecast is appropriate. This "add-back" ensures that the resource adequacy requirement and the load-serving needs are based on the proper peak load amount and, importantly, that there is no double counting of capacity. In other words, if the load impacts of supply-side demand response were not added back into the CEC load forecast, then supply-side demand response capacity would be double counted for resource adequacy purposes, once for its load modifying affect and twice as a supply-side resource adequacy qualifying resource.

3. Customer-side impacts- "customer supplier" versus "customer consumer"

The benefits of demand-side demand response are direct and the operational and implementation complexities are fewer. A megawatt of load reduction is a megawatt not served, or is served by a less environmentally impactful resource in the case of load shifting. And reshaping the load to reduce the system peak reduces the overall annual resource adequacy requirement, to the benefit of all consumers.

Customers on demand-side programs are generally able to choose whether or not they respond to load-modifying signals, conditions, and/or conservation messages, without a performance obligation or the assessment of a financial penalty. With demand-side demand response, customer choice is both its strength and weakness. Its strength is that it is easier and less consequential for customers to participate and manage their load consuming behavior; its weakness is that the load-modifying response is less refined and less predictable compared to the response from supply-side resources. However, with appropriate signals, sufficient numbers of customers have repeatedly shown that they can and will respond to signals that favorably reshape load and reduce peak demand to the benefit of the system and all consumers.

Finally, slowing the growth of, or reducing peak demand year after year because of demand-side actions is a strong indication that demand-side demand response is working and, therefore, fewer conventional supply-side resources are required to sustain the grid, which is an outcome that is congruent with the loading order.

The converse of demand-side demand response is supply-side demand response. To ensure the reliability and load-serving needs of the grid, the balancing area authority must clear and procure energy services, including scheduled energy, imbalance energy, and ancillary services. To be used and useful to the grid operator, supply-side resources must possess attributes that can be modeled, forecasted, optimized, and valued for the benefit of grid and its load serving purposes. The ISO recognizes that demand response is not a generator. However, in fulfillment of the loading order, supply-side demand response is intended to avoid or defer conventional fossil-fuel generation and transmission and distribution infrastructure. For this reason, supply-side demand response is more complex than demand-side demand response, and by its nature, it requires more input and interaction with the end-use customer supplier. Because a supply-side resource is compensated and must be dispatchable when needed, where needed, and in an amount needed, there is greater sophistication in its implementation relative to demand-side resources. The additional responsibility and scrutiny placed on supply-side resources is because providers selling supply-side resources must adhere to market participation rules, resource performance requirements, and compliance obligations. Fundamentally, when an end-use customer elects to provide supply-side demand response either directly or through a third-party, that customer is no longer simply a consumer of energy services; that customer is a supplier of compensated energy services. Thus, there is a new compact with that "customer supplier" who takes on more responsibilities and obligations than a "customer consumer." This distinction between customer types is a defining characteristic of whether a supply-side or a demand-side demand response service is being offered.

E. Demand response cannot be configured as a supply-side resource and treated as a demand-side resource

As the ISO has defined supply-side versus demand-side demand response, the ISO would oppose a bifurcation policy that results in supply-side demand response being treated as demand-side demand response to avoid supply-side integration into the ISO market. First, as described earlier, there is a resource adequacy double counting problem if demand response is not clearly classified as either a supply-side or demand-side resource. Second, if a demand response resource is configured to be dispatched in the right place, right time, and right amount then that supply-side demand resource must be optimized alongside all other resources to ensure a feasible and least-cost dispatch. If supply-side resources are withheld from the market, then they cannot be optimized and they do not contribute to price formation in the wholesale market. Furthermore, the ISO, as the balancing area authority, is the only independent entity that has full visibility and oversight of the bulk power system. Any entity, such as a utility or demand response provider that independently dispatches their supply-side demand response without foresight will do so sub-optimally without clear consideration of the overall system needs and power flow.[3] Sub-optimal dispatches can result in power imbalances and re-dispatching costs. Thus, supply-side demand response must be scheduled, optimized, and dispatched alongside all other resources to ensure a security constrained economic dispatch and unit commitment solution.

III. ISO RESPONSE TO THE FOUNDATIONAL ISSUE OF COST ALLOCATION

The ISO appreciates that the Commission is directly addressing the future cost allocation of demand response programs. The ISO believes that there is a distinction to be made between supply-side and demand-side demand response related to cost allocation.

As a general principle, the ISO has previously expressed that it has a fundamental concern with the existing demand response cost allocation mechanism and its impact on competition between the utilities and third-party demand response providers. [4] Before a viable and competitive supply-side demand response market can take root, the Commission must address the issue of how future demand response costs will be allocated. If the situation continues as today –where the IOUs are allowed to spread supply-side demand response program costs to all distribution service customers, whether or not they participate in demand response programs, but a

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[3] Under current demand response operating procedures, the ISO is notified by the IOU on a spreadsheet when the IOU plans to dispatch its DR programs; however, that dispatch decision is made at the IOU's discretion and is not considered as part of the overall system balancing and power flow needs. Thus notification does not lead to the optimization of IOU demand response resources.

[4] See, for example, Comments of the California Independent System Operator Corporation on the Alternative Proposed Decision Adopting Demand Response Activities and Budgets for 2012 through 2014, filed April 9, 2012, at pg. 8.

demand response provider is only able to spread equivalent costs to its participating customers—then there is an un-level and anti-competitive playing field, which harms the Commission's goal to promote competitive neutrality.[5] Thus, cost allocation is not only a major policy concern, it is also a current barrier to the development of a vibrant and competitive demand response market.

A. Cost allocation rules should adhere to the principle of competitive neutrality

All types of demand response can lower demand and, therefore, bend the curve on wholesale market clearing prices to the benefit of all consumers. Today, the load modifying capability of effective demand response can be provided equally by a competitive third-party provider or a utility demand response provider. However, as discussed above, if today's practice continues, where the utility can spread its demand response program costs to all customers in its rate base, both participating and nonparticipating, but the third-party provider can spread costs only to its participating customers, then the inherent cost allocation structure between the utilities and third-party providers is anti-competitive and is a barrier to the development of a competitive demand response market.

The Commission can act to bring down this barrier in two ways, by either:

1) Ensuring that utility demand response cost allocation is assigned only to those ratepayers who are demand response participants or, more broadly, to the bundled ratepayers who benefit from the utility's expenditures on demand response programs; or

[5] See Decision D.13-12-029, December 5, 2013 at pg. 31, where it states, "We previously stated that a goal of this [DR] proceeding is to promote competitive neutrality and limit anti-competitive behavior."

2) Clearly delineating and transitioning to different roles where, for example, utilities offer rate-based demand-side resources and third-party demand response providers offer competitive supply-side demand response services to commercial and industrial customers. This would prevent future head-to-head competition between the utility and third-party providers, ameliorating conflicting cost-allocation concerns. [6]

Clearly, there is now a competitive demand response market that is capable of offering energy services sourced from commercial, agricultural, and industrial "customer suppliers." With approval of capacity payments of third-party delivered demand response, the market will be mature enough to begin a planned transition that allows the competitive market to source and deliver supply-side demand response resources that perform independent of a utility program or contract.

Thus, as the Commission refines its demand response policies in this OIR, it should take planned steps to transition deliberately toward option #2. Under this option, the utility focuses on creating viable demand-side demand response programs and tariffs, while the competitive market focuses on delivering energy services from supply-side demand response where "customer suppliers" are largely gleaned from the commercial, agricultural, and industrial sectors.

B. Cost allocation concerns can be ameliorated

By pursuing option #2, the majority of today's cost allocation concerns become moot. If the utility focuses on developing robust demand-side actions through rates and tariff-based programs, then it can reshape load and lower peak demand to the benefit of its customers. The costs associated with taking such actions will lower resource

[6] There may be a limited, but continuing role for the utility to provide services, like A/C cycling, to residential customers if third-party providers are unwilling or unable to offer competitive, supply-side demand response services to the residential sector.

adequacy and future procurement costs for its ratepayers. Thus, the costs and benefits of reshaping the utility's load should be shared by the utility's bundled service customers. Similarly, a direct access provider could share the costs and benefits with its customers of offering rate schedules and options that encourage flatter, higher load factor load consumption. Such incentives or signals directly benefit both the direct access customer and its provider, and, indirectly, all ratepayers as a result of a flatter and lower peak demand curve.

Under option #2, future supply-side demand response would be offered through the competitive market. The provider's costs associated with developing and operating supply-side demand response would be borne by the provider and its participants, not ratepayers generally. Exactly how the provider's costs are spread to its customers is the provider's business prerogative. Thus, under this paradigm, there are no supply-side demand response costs to allocate given these services are delivered through the competitive market.

By transitioning over time to option #2, the Commission both ameliorates many of the difficult and complex cost allocation concerns and it upholds its principle of competitive neutrality.

IV. CONCLUSION

The ISO believes that the Commission is headed in the right direction in separating demand response into the two "buckets" that are based on the function and purpose of these programs and how they uphold the loading order. Furthermore, proper cost allocation is essential for leveling the playing field and promoting supply-side competition. Ratepayers will benefit from the ultimate goal of appropriately designed demand response resources, which will reduce the need for conventional generation and grid assets. The ISO looks forward to continued participation in this docket and collaboration with the Commission and stakeholders on these important topics.

Respectfully submitted.

By: *<u>/s/ Judith B. Sanders</u>*
Nancy Saracino
General Counsel
Andrew Ulmer
Director, Federal Regulatory Affairs
Anna McKenna
Assistant General Counsel
Judith 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

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