Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide your comments on the Issue Paper and Straw Proposal posted on July 30, 2015 and as supplemented by the presentation and discussion during the stakeholder web conference held on August 6, 2015.

Submit comments to InitiativeComments@caiso.com

Comments are due August 18, 2015 by 5:00pm

All documents for the energy storage and distributed energy resources (ESDER) initiative, including the July 30, 2015 Issue Paper and Straw Proposal and the presentation discussed during the August 6, 2015 stakeholder web conference, are available on the webpage for the ESDER initiative at: http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorage_AggregatedDistributedEnergyResources.aspx

Non-generator resources (NGR) enhancements

Please provide your comments in each of the four areas of proposed NGR enhancement.

1. Update documentation on NGR to capture material and clarifications compiled for April education forums.

No comments

2. Clarify how ISO uses state of charge (SOC) in market optimization.

No comments

3. Evaluate initial SOC as a submitted parameter in the day-ahead market.

No comments

4. Evaluate option to not provide energy limits or have the ISO co-optimize an NGR based on state of charge.

No comments

PDR/RDRR enhancements – alternative baseline methodologies

Please provide your comments in each of the two areas of proposed enhancement.

1. Develop meter generator output (MGO) as a new ISO baseline methodology.

No comments

2. Develop additional detail regarding the "ISO Type 2" baseline methodology (i.e., provision of statistically derived meter data) and document that in the appropriate BPMs.

No comments

Non-resource adequacy multiple use applications

Please provide your comments on each of the two non-RA scenarios the ISO has proposed to address.

Also, the ISO strongly encourages stakeholders to ***identify and describe use cases*** under each scenario (including diagrams of the configurations contemplated for these use cases), and specific issues not covered in these scenarios that should be addressed in this initiative.

1. Type 1: Resource provides services to the distribution system and participates in the ISO market. Question 1 – How do we manage conflicting real-time needs or dispatches by the distribution utility and the ISO? Question 2 – If distribution system and ISO needs are aligned, and the resource's actions meet the needs of both, is there a concern about the resource being paid twice for the same performance? Under what situations is double payment a concern? How should we address this concern? Question 3 – Should any restrictions be on a DER aggregation or the sub-resources of a DER aggregation providing distribution-level services? Would the distribution utility ever call upon a multi-pricing node DER aggregation to address a local distribution problem?

Comments:

A third-party aggregator or a Distribution Service Operator ("DSO") should manage conflicting real-time needs or dispatches by the distribution utility and the ISO, as discussed in the White Paper circulated by the CPUC in relation to the Distribution Resources Plan Rulemaking.[1] The service supplier should have its own pool of resources from which it can dispatch to meet the needs identified by the ISO. Under this approach, instead of directly controlling the resources, the ISO would purchase stand-alone services and charge Load Serving Entities for the performance required from ISO operations.

This setup works well for a number of reasons. First, ISO needs are less area-specific than a DSO's. Whereas a DSO would operate at or below the substation level, the ISO operates above the substation. Therefore, the DSO would be able to utilize resources to optimize the distribution grid below the substation, and resources that were not fully utilized or that were located in other areas where the DSO is not dispatching could be sold to the ISO. Second, under this scenario there would not be two competing sources buying services from one individual facility because the DSO or other aggregator would bundle services from a collection of facilities and directly manage where and when to sell them. Third, double payments should not be a concern under this scenario. The ISO would simply buy services, instead of paying for direct control of the resource. If a resource is able to meet the needs of both the ISO and the DSO, it should be paid for both offerings. Further, by providing for two sources of compensation, the supplier can offer the same resource at a lower price to both buyers—serving multiple value streams at lower cost. At the same time, by first meeting distribution level needs, demand for ISO capacity is generally reduced, lowering demand within the ISO market and the cost of meeting that demand.

[1] *See* Lorenzo Kristov & Paul De Martini, 21st Century Electric Distribution System Operations (May 2014), *available at* http://resnick.caltech.edu/docs/21st.pdf.

This setup would require the prioritization of services to be determined through contracting with the ISO. For example, operational requirements should always take priority over utilizing resources for purely economic benefit. For example, energy storage should be used for voltage and frequency support, if needed, over rate arbitrage. The energy storage resource can also provide services at lower cost if its capacity is optimally utilized as an element of a portfolio rather than reserved for a low probability scenario that may be addressed by alternative contingency options.

Further, efficiency would be promoted by creating an intermediary with awareness of both distribution grid and ISO needs that is able to accomplish its objectives through both rate design and interaction with the ISO markets. If the aggregator is also the DSO, then the entity can provide pricing signals that are aligned with ISO needs. This would encourage behind-the-meter resources to operate in a way that provides services to the ISO, reduces the need for direct ISO dispatch, and reduces the burden that the DSO, or the utility, places on the ISO through service requirements. These actions would serve to reduce costs for all parties. Creating a means for the ISO to directly dispatch resources would require more infrastructure and technical development, and the same goals could be accomplished through rate changes and pricing modifications like demand charges or time-of-use ("TOU")/real-time pricing.

One final issue the CAISO should be aware of is the current application of transmission access charges ("TACs") at the customer meter—instead of at the transmission interface—which fails to encourage efficient use of ISO resources. Under the current tariff language, the CAISO assesses TACs against the gross customer load of the state's major investor owned utilities. It would be more appropriate to assess TACs according to the portion of load served by transmission resources (i.e., as measured at the transmission interface). This measurement methodology has the impact of assessing the delivery cost of local distributed renewable resources that serve loads without the use of the transmission system comparably to generation delivery cost of utilizing the transmission system. As a result, local renewable generation is not credited with the full avoided cost value it can offer, and development of lower net total cost local renewables is depressed. Correction of this cost allocation would support accurate least cost and best fit procurement of resources.[2]

[2] For more information on rethinking application of TACs, *see* Clean Coalition Comments on the Impact of Transmission Access Charges on Impending Development and Contribution of Distributed Renewable Generation in Achieving Greenhouse Gas Reduction Goals (Aug. 7, 2015), *available at* http://www.clean-coalition.org/site/wp-content/uploads/2015/08/Clean-Coalition-comments-on-TAC-impact-on-GHG-reduction.pdf.

2. Type 2: Resource provides services to end-use customers and participates in the ISO market. The ISO has identified the following three sub-types (are there others?): (a) DER installed behind the customer meter, such that flow across the customer meter is always net load; (b) DER installed behind customer meter, such that flow across the customer meter can be net load or net injection at different time; and (c) DER installed on the utility side of the meter, may provide service to end-use customers and participate in wholesale market.

Comments:

DER are capable of providing services to both customers *and* the distribution system while also participating in the ISO market. If resources are not providing services to all three sectors, this may indicate the existence of an artificial barrier and structural inefficiency of the market mechanisms to realize the full value of the available assets. As a result, this may inhibit the deployment of assets that would most cost effectively provide services. For the facility owner, the optimized use of resources aims to provide the highest total value where customer, distribution, and ISO needs are coincident, and then in descending order of realized value as the facility responds to demand and signals in relation to customer demand, applicable tariff rates, and ISO market signals.

As the state's utilities implement mandated Distribution Resource Plans under CPUC Rulemaking 14-08-013 in order to both identify and leverage net ratepayer benefits of DER integration while accommodating customer driven DER growth, very significant modifications in ISO loads will be likely. The impact of these changes on ISO peak and flexible capacity requirements, and on daily operations and markets, will be substantially determined by the ability of ISO signals to influence DER operation. Such signals will include both dispatch orders to contracted resources and price signals in the form of market pricing and cost incentives realized by DSOs. This includes Resource Adequacy requirements, capacity and congestion charges, and the influence of the allocation of TACs, which, as noted previously, currently discourages the use of DER by charging major Load Serving Entities based on their Gross Load as measured at the customer meter rather than the load they actually receive from the ISO through the transmission system.

Where the ISO provides clear financial signals to DSOs to reflect their impact on ISO controlled resources and infrastructure, and to reduce the marginal cost of such impacts, the DSO will respond to the incentive. The response will be through the use of the DSO's DER, contracted resources, and customers' resources by means of operational incentives or direct control. DSO control may be established under the DER interconnection tariff and associated agreements, including the use of advanced inverter functionality, as well as through general rates (i.e., TOU and demand charge

factors) and targeted incentive programs (i.e., energy efficiency and demand response programs such as Smart EV Charge, Smart Rate, and Smart AC).

As noted in a Proposed Decision released last week in the CPUC Integrated Demand-Side Resources proceeding, the "integration of demand-side resources is the collective action of customers, the Commission, the Utilities, the CAISO, etc. to optimize demand-side resources to the extent possible."[3] Under this proposed approach, DER providers may suggest new methods for how they are to receive value for their services. This CPUC initiative and the directly associated implementation of the utilities' Distribution Resources Plans should inform CAISO rules, planning, and market development for participation of these resources. DER is not an individual technology; it is a flexible, diverse portfolio that can change over time. As the Proposed Decision notes, there is currently no single way to consider these different technologies as a whole, which must change—in part through the Integrated Demand-Side Resources proceeding.

The Clean Coalition believes that it is most efficient to promote the application of resource capabilities first where they offer the greatest impact and value, which is typically directly to the customer. Then the net capabilities of locally aggregated portfolios can be applied to address increasingly broad needs up through the distribution system and into the transmission system. The collective impact of mitigating local needs will generally address broader system needs while offering all remaining capacity to further tackle system needs. Moreover, system needs can be prioritized when presenting greater value. As such, we encourage the ISO to explore and support development of a DSO approach to aggregation and optimized utilization of DER in close coordination with the above-mentioned CPUC proceedings.

[3] Decision Adopting an Expanded Scope, a Definition, and a Goal for the Integration of Demand Side Resources, Cal. Pub. Util. Comm'n Rulemaking 14-10-003 (filed Aug. 13, 2015), *available at* http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M153/K740/153740896.PDF.