Stakeholder Comments

SCE comments on Frequency Response Phase 2 Issue Paper

Submitted by	Company	Date Submitted
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Southern California Edison (SCE) offers the following comments on the SCE comments on the Frequency Response Phase 2 Issue Paper[1] of the California Independent System Operator (CAISO).

Dispatching a resource to provide Frequency Response (FR) compensates the resource with energy payment which is appropriate

SCE defines provision of FR as a resource's being dispatched by the CAISO to meet system FR needs. SCE defines capability for FR as a resource's ability to provide FR when deployed – this involves having a governor and related control systems and algorithms. These definitions are consistent with the definitions used by the CAISO in its Reactive Power initiative.

A resource that is dispatched for FR provision gets compensated for it through energy payment. It is not physically possible to dispatch a resource for FR but not have it provide energy. The frequency of any system is directly related on the energy supply, thus, energy payments are appropriate compensation for provision of FR.

[1] http://www.caiso.com/Documents/IssuePaper_FrequencyResponsePhase2.pdf

Capability payments to resources will result in double payment for the same attribute and are not justified under any circumstances

As SCE had noted in its comments in the CAISO Reactive Power Initiative[2], any payment made to resources for an attribute already contracted for, will result in a double payment. In that initiative, the CAISO agreed with SCE on that fact.

Other ISOs have capacity markets which are absent in California. Capacity markets enable separation of capacity versus other attributes (FR, Voltage Support, etc.) capability costs, allowing targeted compensation for each attribute. In contrast, California uses bilateral contracting[3] to compensate for all attributes of generation. Further, these contracts represent a variety of options through which generators provide these attributes to California load. Within these contracts, all attributes can be procured, placing no restrictions (beyond physical limitations) on the provision of any service or product. Since all attributes of a resource are contracted and compensated, there is no need for the CAISO to additionally compensate generators for such features, such as FR capability, within the CAISO market.

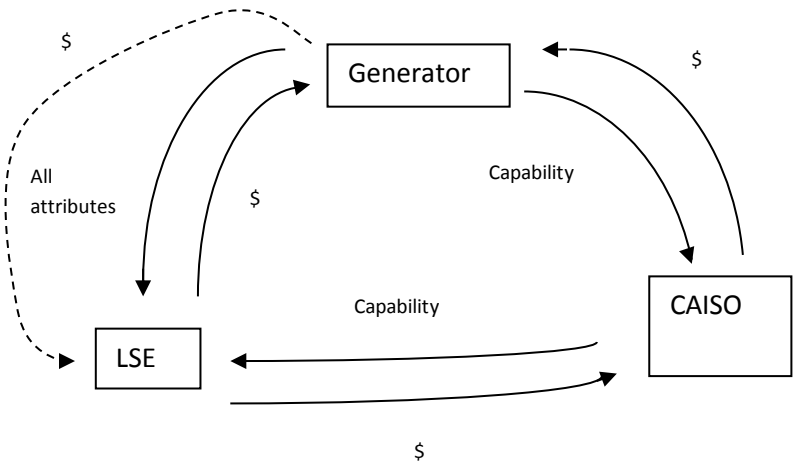
Implementing a capability differentiating mechanism in the presence of an all-attribute compensating mechanism is unnecessary and inconsistent

A separate compensation mechanism attempts to differentiate an already included feature, thereby creating a disconnect in compensation mechanisms. It is neither efficient nor appropriate to have a mechanism that considers all attributes of a resource function alongside another mechanism that focuses only on a single attribute. Further, any external compensation amounts to potential double-payment for the same attributes.

In general, any CAISO compensation for FR will result in the following:

[2] http://www.caiso.com/Documents/SCEComments_ReactivePowerRequirements_FinancialCompensation-IssuePaper.pdf

[3] A non-exhaustive list of these includes Resource Adequacy (RA), Renewable Auction Mechanism (RAM), Combined Heat and Power Request for Offers (CHP RFO), Eligible Renewable Resource (ERR), Power Purchase Agreement (PPA), Photovoltaic Standard Contract (PVSC), Qualifying Facilities (QF) Settlements, Renewable Standard Contract (RSC), and Tariff contracts.



A generator would be contracted by a Load Serving Entitiy (LSE) for all its attributes. It would receive a payment from the LSE for those attributes. The generator would then be contracted by the CAISO for FR capability and would receive a payment from the CAISO for that attribute. Finally, since the CAISO has to maintain revenue neutrality, it would collect the capability payment from the LSE. Not only is the generator being paid twice, but also the LSE is being charged twice for a service it already procured. The best case and simplest resolution to this would be that the LSE↔generator contract passes any CAISO payments back to the LSE, as shown by the dotted line in the diagram above. This still amounts to a convoluted, roundabout process – an extra settlement for a service already procured by the LSE and something the CAISO did not have to procure.

At minimum, this scenario adds unnecessary administrative and transaction costs – increasing costs at no benefit, which depends on the revenue and cost streams being correctly allocated and accounted for by the CAISO, the market participants and the contractual parties. Establishing a capability compensation mechanism is likely to cause inefficiencies through the added, unnecessary complexity. For the above reasons, SCE does not believe that a capability attribute should receive a CAISO payment[4].

[4] To the extent that the CAISO has identified an existing generator that is not presently providing FR, meeting a demonstrated need for FR, SCE prefers that such a generator be individually compensated for such service, rather than a blanket payment for all generators for an attribute that is accounted for within bilateral contracts. In such a case, it would be most effective to review the individual circumstances to determine what if any incremental payments should be made and by whom to appropriately compensate the generator for the FR capability.

A resource held for potential FR provision is consistent with providing an ancillary service and should be compensated with an opportunity cost for foregone energy provision

If a resource is not dispatched for FR but is held for potential FR provision, that resource should be compensated for its opportunity cost for foregoing energy production. However, once a resource is dispatched for energy, it is paid for energy and should not be double-paid for FR when without its energy dispatch there is no FR. Again, it should be noted that FR and energy are directly dependent. The frequency of a system is directly dependent on the energy supply in the system. Having one without the other is meaningless. Compensation for energy automatically compensates for FR. Any other payment is a double payment.

The CAISO analysis does not show an increasing FR problem

The issue paper analysis in table 4 on page 26 showed a decreasing FR shortfall from 2015 to 2016. In 2015 the shortfall was 32 MW/0.1Hz while in 2016 the shortfall was about half the shortfall in 2015, at 17 MW/0.1Hz.

The CAISO's Phase 1 FR initiative dealt with requiring governor deadband and droop settings. This stemmed from the CAISO findings[5]:
"First, the ISO found several resources did not respond as expected to frequency events because the DCS will almost completely override governor response. There is little to no performance if the DCS, plant level control systems, are not coordinated with the governor controls." …
"Second, the ISO found that temperature outer loop controls occur at a higher level control than the DCS." …
"Third, resources' maximum capacity under governor control may not be the same as the maximum capacity registered in Masterfile." …
"Finally, in some instances the ISO did not observe additional output when resource was decreasing their output in response to a downward dispatch instruction." …

[5] Page 15. http://www.caiso.com/Documents/DraftFinalProposal_FrequencyResponse.pdf

The CAISO did not provide any information on the quantitative impact of such deficiencies, relative to the total fleet. Further, the CAISO did not provide any follow-up analysis of how its deadband and droop requirements, effective August 15 of last year, changed fleet performance. However, the CAISO's limited analysis from table 4 shows that the shortfall for this year was half of that of last year even though the new deadband and droop requirements were only effective for half the year. That shows a substantial improvement in fleet performance rather than a decline.

SCE strongly urges the CAISO to perform due diligence in its analysis and provide stakeholders with a complete picture of the total impact to the fleet from before and after the deadband and droop requirements. At minimum, such an analysis should include the percentage of (relative to total fleet MW/0.1Hz) FR of the non-responsive resources found in Phase 1 and the change in the percentage share of these non-responsive resources after August 15, 2016.