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The California Large Energy Consumers Association (CLECA) provides these brief comments on the CAISO's Frequency Response Issue Paper (Issue Paper). CLECA's comments go to several points.

First, it appears there may be merit in creation of a frequency response product. This product could be provided by generation, storage, or load. A payment for providing it would produce an additional revenue stream for the resource and would provide some incentive for a resource to provide this capability. For example, if there is a concern that generators will inhibit governor response in order to maintain a pre-selected megawatt level to maintain a resource's day-ahead energy schedule, it seems that compensation to provide frequency response should equal or exceed the costs associated with failing to meet that day-ahead energy schedule. For response that would have to make an investment (e.g. smart inverters) or incur a reduction in service (e.g. frequency-responsive load) in order to provide frequency response, the compensation would have to exceed the expected cost of providing the service.

Since the CAISO says it cannot implement a separate frequency response product by the end of 2016, the Issue Paper discusses adopting an interim measure, such as using spinning reserve to provide the service. The reason is that spinning reserve has headroom except in the rare instances where it is dispatched. We do have a concern with this interim option. The Issue Paper states that the CAISO may have to modify spinning reserve procurement to be sure to obtain sufficient frequency response. If a generator cannot provide as much frequency response capacity as spinning reserve capacity, this means the CAISO would have to produce more spinning reserve than at present. Does the CAISO have any information as to how much additional spinning reserve this would be? What would be the cost to load of acquiring this additional spinning reserve? How would this compare to the price of a frequency response product, where resources would voluntarily add the capability and be compensated for it?

In the longer term, there appears to be a trade-off between the possible imposition by the CAISO of a requirement that synchronous *and non-synchronous* generators provide frequency response, and a market-based approach that pays providers for the capability. What would be the relative cost? A requirement to provide this service would appear to impose a cost without compensation to the resource.

Second, the Issue Paper asks for input on how solar, wind and storage could provide frequency response. The Issue Paper points out that load can provide frequency response through frequency-based load shedding. In fact, there is a provision in PG&E's current Base Interruptible (demand response) Program tariff that customers can have installed an under-frequency relay (UFR) that will drop load if frequency falls to 59.65 Hz or below for 20 seconds. In exchange, these customers receive a monthly incentive payment. There are customers with these UFRs who are members of CLECA. Such load-provided frequency response should be considered as one option available to the CAISO, either through existing utility demand response (DR) programs, via DRPs, or under some other construct. The specific current PG&E tariff provisions of 59.65 Hz and 20 seconds could be reconsidered in a CPUC DR proceeding if the CAISO is seeking a different type of capability from frequency-responsive load.

Third, it appears from the Issue Paper that the CAISO will demonstrate to NERC and WECC its compliance with the new frequency response requirement on an after-the-fact basis, i.e. when there is a frequency disturbance, resources provided sufficient response. We assume this means either a under or over- frequency situation. However, the Issue Paper also states that the CAISO must be able to demonstrate that it can meet its share of the WECC requirement when called upon to do so. Here, CLECA is unclear about exactly what the CAISO must demonstrate. Is it so many MW of synchronous generation? Is it so many MW of frequency-responsive resources, derated for the amount of frequency response each can provide? Would a demonstration be an agreement with a resource owner to provide a level of frequency response or the imposition of a requirement for resources with a penalty provision for failure to respond when required? Some clarity about what is to be demonstrated would be helpful.