



# ORA

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## THE OFFICE OF RATEPAYER ADVOCATES' COMMENTS ON THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR'S DECEMBER 15, 2016 PHASE 2 ISSUE PAPER ON FREQUENCY RESPONSE

The Office of Ratepayer Advocates (ORA) files these comments on the California Independent System Operator's (CAISO) Frequency Response Phase 2 Issue Paper (Issue Paper), dated December 15, 2016. With approval of the Federal Energy Regulatory Commission (FERC) BAL-003-1 reliability standard, frequency response services became mandatory, effective January 16, 2014. Given the first compliance year of December 1, 2016 to November 30, 2017 for the BAL -003-1, the CAISO implemented an interim Frequency Response Phase 1 (FR Phase 1) on September 16, 2016 and now proposes Frequency Response Phase 2 (FR Phase 2) to meet its Frequency Response Obligation (FRO).<sup>1</sup>

As part of the FR Phase 2 plan, the CAISO proposes the following market design principles:

1. Produce market outcomes that enable the CAISO to position its fleet to respond sufficiently to frequency disturbances in the post-event measurement period;
2. Allow all technology types to participate in the procurement mechanism through ensuring there are no barriers to entry;
3. Produce price signals that incentivize capital investments on resources to be capable of providing Primary Frequency Response (PFR); and

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<sup>1</sup> The Western Energy Coordination Council (WECC) conducted studies for the Western Interconnection and determined the total frequency response capability needed to maintain the power supply stability of the Western Interconnection, measured in MW/0.1 Hz, and allocated the Frequency Response Obligation (FRO) to the Balancing Authorities within the Western Interconnection. According to WECC, CAISO's FRO is 285 MW/0.1 Hz. Based on CAISO studies, the CAISO will have a shortfall of approximately 100 MW/0.1 Hz for meeting its FRO for the first compliance year. In order to meet the FRO, the CAISO, through its stakeholder processes, developed the Frequency Response Phase 1 approach, which is for the CAISO to procure the 100 MW/0.1 Hz of frequency response capability shortfall from neighboring balancing authorities. The CAISO Board of Governors approved the proposal and the CAISO filed tariff language with FERC on April 21, 2016. FERC approved the filing on September 16, 2016.

4. Ensure compensation of capital investments made to meet the required capability if frequency response capabilities become an interconnection requirement.<sup>2</sup>

ORA disagrees with proposed Principle #1. Currently, the conventional generators that have the capability of providing FR services are required to provide the services under agreements between the generator owners and transmission owners and operators.<sup>3</sup> Costs associated with this service are reflected in those agreements. The CAISO should enforce these contract requirements and there should not be additional payments to the conventional generators for their provision of the FR services under these contracts. If enforcing the contracts does not provide the CAISO with sufficient FR to meet its obligations then the CAISO should consider whether it is cheaper to procure the needed FR services from neighboring balancing authority areas (BAA), similar to the FR Phase 1 approach. As long as the CAISO can meet its FRO through one or both of the above two approaches (i.e., using the existing generation in the CAISO's BAA or procuring FR from states outside the CAISO's BAA), the CAISO should not need to position its fleet to respond to frequency disturbances. In sum, ORA recommends that the CAISO continue to receive FR from generators without additional compensation and/or procure FR from other BAAs.

ORA supports proposed Principle #2 because it supports competition and open access to CAISO's power market. However, ORA would like to clarify that allowing all technology types to offer the eligible FR services does not mean requiring them to offer the FR services.

ORA supports proposed Principle #3 in general. Assuming there is a need for the FR service procurement mechanism, the CAISO should design the mechanism to send accurate price signals to potential FR service providers. At the same time, the CAISO needs to balance the benefits and costs of developing a market mechanism to produce the price signals.

ORA does not support proposed Principle #4. ORA observes that there is no need to require all the generators interconnecting to the Western Interconnection to install FR capabilities at this time.<sup>4</sup> As long as there are generators interconnected to the Western Interconnection that can provide sufficient FR services to the western grid including the CAISO, there is no need to require all the generators to have the FR capabilities. This is

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<sup>2</sup> CAISO Frequency Response Phase 2 Issue Paper Dated December 15, 2016, page 5.

<sup>3</sup> CAISO Tariff, p. 2316, Appendix Z LGIA For Interconnection Requests Process Under the GIP, 9.6.2.1 Governors and Regulators.

<sup>4</sup> Please refer to ORA's discussion regarding the CAISO Principle #1 above.

especially true for renewable generators that cannot provide inertial response easily. Such a requirement could slow the development of renewable generation and achievement of California's renewable portfolio target.

Specifically, the CAISO also seeks stakeholders' comment on the following two issues as outlined in the Issue Paper:

1. "Does the current ancillary services paradigm position the system to be able to sufficiently respond to meet reliability requirements?"<sup>5</sup>

The CAISO reported some stakeholders opined that in order to provide the FR services, the generators need to reserve generation capacity (or headroom) for the FR provision. As a result, the generators lose the opportunity to use the headroom to generate electricity. These stakeholders recommend that the generators should be compensated for these opportunity costs. Some stakeholders advocated for a capacity payment that would be based on the speed of the frequency response, while other stakeholders argued that generators should be compensated for their operating costs for providing energy only. The CAISO stated that it is reasonable to compensate resources for their FR capability, frequency responsive reserves, and frequency response provision.

ORA suggests that the CAISO could include the frequency response product in its ancillary service market to acquire sufficient FR services to meet the FRO that is allocated to it by the Western Electricity Coordinating Council.

In order to provide the FR services, the generators need to reserve sufficient generation capacity or "headroom" so that the generator may not operate at the maximum output level (or Pmax). However, the FR service commitment may not be the only reason the generator is unable to operate at the Pmax level. For example, the generator's energy market offer could have been rejected. Consequently, it is difficult to compensate the generators for opportunity costs without knowing which part of the headroom is due to the FR reserve commitment and which part is due to the energy bid rejection. Therefore, instead of paying for opportunity costs, the CAISO could have a higher FR service bid cap so generators are allowed to reflect the opportunity costs in their FR service offers.

ORA does not see the need to compensate generators for FR provision other than for payment of the energy. When generators provide frequency response services, the

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<sup>5</sup> CAISO Frequency Response Phase 2 Issue Paper Dated December 15, 2016, page 3.

frequency response providers could be paid similar to other ancillary service provisions for the energy they injected to the system under the current real time energy market settlement mechanism. There is no need for additional payment to the generators for providing frequency response in real time.

With regard to FR speed, since the needed FR discussed here is primary FR services, which needs to be available within 1 minute of the frequency disturbance event, there is no need to further divide the 1 minute time frame into different categories.

2. “Does the current market design produce price signals that incent capital investments on resources to be capable of primary frequency response?”<sup>6</sup>

The CAISO’s Issue Paper discussed the technical potential for various resources to provide the required FR services, including consuming prime power of generation from steam turbines, reducing demand on the system, providing power from storage, and harnessing intermittent natural resources such as wind and solar. The CAISO also discussed price signals for capital investment to maintain FR capabilities.

The issue of whether or not generators should invest in frequency response capability, and whether or not the California load serving entities (LSEs) should be required to procure the FR capability from the generators, should be discussed in the California Public Utilities Commission’s (CPUC) Integrated Resource Plan proceeding since the CPUC regulates investor owned utilities, which are LSEs.<sup>7</sup>

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<sup>6</sup> CAISO Frequency Response Phase 2 Issue Paper Dated December 15, 2016, page 3.

<sup>7</sup> This is a proceeding where the CPUC addresses energy resource planning.