Submit comment on 5/13 call

Initiative: Demand and distributed energy market integration

1. What baseline improvements would increase performance, entry, and demand flexibility innovation? *

The California Efficiency + Demand Management Council ("Council") and Leapfrog Power, Inc. ("Leap") appreciate this opportunity to comment on the discussion from the May 13 Demand and Distributed Energy Market Integration ("DDEMI") Working Group.

The Council and Leap appreciate the presentation given by the Department of Market Monitoring ("DMM") regarding its concerns about demand response ("DR") baselines. Unfortunately, it posed several questions without providing suggested solutions.

The Council and Leap agree with DMM that, to the extent that existing DR baselines are inadequate in some way, the first option should be to modify them rather than simply create new ones. However, DMM has not adequately explained the risk incurred by retaining the current number of DR baselines, or even expanding their number should it be necessary. In the absence of any evidence (e.g., additional CAISO operational costs, diminished DR baseline accuracy, etc.), DMM's concern appears to be a solution looking for a problem. Also, when considering whether to reduce the number of DR baselines, the CAISO should consider the significant amount of effort and time that is required to create new DR baselines and get FERC approval (if DR baselines are not moved out of the CAISO Tariff and into a Business Practice Manual) should it be discovered that some eliminated baselines could have been used in the future. In any event, any consideration of eliminating DR baselines should wait until the very end of the DDEMI process because only then will the updated DR baseline landscape be apparent.

As a general principle, good DR baselines will increase performance, entry, and innovation. On a conceptual level, the primary role of DR baselines is to ensure accurate performance measurement of DR resources. As such, well-designed baselines will accurately measure DR performance. In turn, accurate measurement will encourage good DR performance (by ensuring compensation commensurate with performance). Additionally, well-designed baselines will attract entry by accurately accommodating the inherent heterogeneity among participants. This heterogeneity can be reflected in frequency of dispatch, weather-dependence, and technology type. Similarly, well-designed baselines can help to facilitate innovation by ensuring accurate performance measurement of new technologies (e.g., the growing range of direct-controlled smart devices and BTM energy storage) and use patterns.

One helpful exercise may be to assess current baseline gaps by explicitly identifying the various use categories (which would be defined by factors such as customer type, underlying technologies, dispatch frequency, etc.) and assessing whether the existing suite of baselines addresses all of these needs.

In the meantime, the Council and Leap offer some thoughts on specific baseline improvements.

Device-Level Measurement to Increase Performance, Entry, and Demand Flexibility Innovation: The Council and Leap continue to support device-level measurement as a measure that, though it is not a baseline per se, can lead to increased performance, entry, and demand flexibility innovation. The Council and Leap discussed the potential benefits of device-level measurement at the April 7 DDEMI Working Group but reframes those most relevant to the three criteria highlighted in this question:

- **Increase Performance:** Faster and more accurate measurement of load curtailment by eliminating reliance on the IOUs to provide customer meter data
- **Entry:** Potential to dramatically increase DR participation in the CAISO market by eliminating the requirement for customers to go through the IOU Share My Data process in order to enroll with a third-party DR providers
- **Demand Flexibility Innovation:** Allow multiple providers to serve devices across a premise, increasing customer choice of DR providers and also allowing each device to be dispatched during the hours of the day when they can provide the greatest benefit to the grid

The benefits of device-level measurement outlined above underscore the importance of moving forward with Problem Statement #5, which CAISO's May 13 presentation indicated that they were seeking stakeholder feedback on. The Council and Leap believe that this problem statement is important to include, and that its phrasing in the May 13 presentation is appropriate. The ability to register specific devices in the DRRS, as opposed to the customer-level meter, is important, and will become increasingly important as more and more homes end up with multiple devices behind-the-meter, most of which are controlled by different entities. Furthermore, the authorization process for sharing meter-level data constitutes a significant barrier to third-party participation with CAISO. As PG&E states in a recent reply to its Advice Letter 7577-E, the requirement for customers to complete the Share My Data authorization, as well as to provide their PG&E login information and account number, creates a notably more arduous enrollment process for customers. Problem Statement #5 critically addresses the fact that customers registering at the service account level (via utility data sharing procedures) hinders enrollment in wholesale-integrated DR programs, and that developing alternative processes for device-level registration would substantially increase DR resources' entry into the market.

Universal Access to Control Groups for Increased Dispatch Frequency: Today, most DR resources participating in the CAISO market use 5-in-10 or 10-in-10 baselines, comparing a customer's actual load during an event to their recent load profiles. While generally effective for users with stable load patterns and infrequent dispatch, this method is inadequate for the new generation of more frequently-dispatchable DR which uses thermal and electric energy storage, electric vehicles ("EVs"), and/or directly-controlled smart devices. These technologies can dispatch more frequently, but under current measurement methods, frequent dispatching distorts baseline calculations, creating challenges for DR to dispatch in the CAISO market with greater regularity. One potential solution would be the greater use of control group baselines because the constituent customers are not impacted by frequent DR dispatch. However, in addition to the problem described by Pacific Gas and Electric Company ("PG&E") that is created by requiring control group participants to be registered in the Demand Response Registration System ("DRRS"), there are significant barriers to third parties accessing large-scale non-participant data, as described in the response to Question 2 below.

A middle-ground approach to consider would be the use of "prescriptive baselines." This approach would introduce a new type of "control group" methodology in CAISO, but one where the control

group is built in advance using historic customer load data rather than constructed in response to individual DR events. Prescriptive baselines have been used in the CEC's Demand Side Grid Support ("DSGS") program since summer 2023 and discussed in detail by Leapfrog Power in its presentation at the March 3 DDEMI Working Group. In the DSGS Incentive Option 3 participation model for residential batteries, the CEC established a static or "prescriptive" baseline for all batteries participating in the program. This prescriptive baseline is based on the average battery usage for residential battery customers in California, and it is updated every two years to ensure it accurately reflects current customer battery use patterns. If used for Proxy Demand Resources ("PDRs"), this baseline methodology would allow batteries to be dispatched as frequently as they are able to supply energy to the grid, calculating their performance using average battery demand as a counterfactual. This would streamline DR performance calculations while maintaining accuracy, because at the aggregate level, a resource composed of hundreds or thousands of batteries should have a counterfactual demand close to the overall state average.

CAISO already allows for DR performance by electric vehicles and distributed batteries to be measured using device-level data (via the EVSE and MGO baseline methodologies, respectively). It would be relatively simple for CAISO to allow customers using these baseline methodologies to measure their performance against average energy use for EVs and batteries in California, which are relatively uniform within customer types. Since the CEC already has experience constructing these types of baselines for the DSGS program, it could support the development and subsequent updates to prescriptive baselines in wholesale markets, potentially as part of its Integrated Energy Policy Report that it submits to CAISO on a biannual basis.

This approach could also be expanded to other technologies (e.g., thermal energy storage, smart thermostats, and heat pump water heaters) and customer types. Because prescriptive baselines are set up using historic load data, it is possible to design finely-tuned comparisons based on a number of conditions. For example, a household's response to a DR dispatch on a 100-degree day would be assessed against the average load of similarly-sized customers at the same temperature over previous years.

2. Why are the control group and weather matching baselines not widely used? *

The largest challenge with using control groups from the perspective of third-party DR providers is the absence of access to non-participant customer data. As for-profit businesses, DR providers cannot afford to allocate significant budget to recruiting customers whose sole purpose would be to act as a control group. Every enrolled customer is a source of revenue, so their load curtailment must be utilized to the greatest extent possible. From the IOU perspective, PG&E's March 3 *Proposal to Revise Demand Response Control Group Settlement Methodology* indicates that another barrier to control group use is the required enrollment of these customers in the DRRS.

As described by a stakeholder during the May 13 DDEMI Working Group, weather-matching baselines can be problematic due to the difficulty of finding comparable weather conditions when a DR event occurs during extreme heat. Also, whenever comparable weather conditions do occur within the same time frame as a DR event, it is likely that DR resources were dispatched on that day as well. From an operational standpoint of a DR provider, the 90-day lookback period is sometimes prohibitively long to manage for large numbers of customers and individual resources.