

**Comments of the Natural Resources Defense Council (NRDC) on the
*Lead Commissioner Workshop on Increasing Demand Response Capabilities
in California***

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I. Introduction and Summary

The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer these comments on the California Energy Commission's (CEC or the "Commission") *Lead Commissioner Workshop on Increasing Demand Response Capabilities in California*. NRDC is a non-profit membership organization with a long-standing interest in minimizing the societal costs of the reliable energy services that Californians demand. We focus on representing our nearly 100,000 California members' interest in receiving affordable energy services and reducing the environmental impact of California's energy consumption. NRDC supports scaling up clean, cost-effective, targeted demand response (DR) to enable a more intelligent, flexible, and responsive electricity grid to accommodate the higher penetrations of variable output renewable resources in California that are essential to meeting the state's long-term climate goals.

In summary, NRDC's comments expand on the following recommendations:

- The Commission should help ensure DR is truly clean and merits its top priority status in the "loading order" by evaluating mechanisms and recommending concrete steps to enforce the prohibition on dirty back-up generators (BUGs) participating in demand response.
- The Commission should explore and articulate the benefits that demand response and energy efficiency can offer in meeting the operational needs associated with high penetrations of variable renewable resources on the grid.
- The Commission should assist with a targeted ramp up of demand response and energy efficiency resources in the wake of the SONGS shutdown.
- The Commission should help ensure end-use technologies are ready to be responsive to control and price signals by examining opportunities to integrate DR considerations into its work on appliance standards and building codesII. Discussion

1. **NRDC urges the Commission to examine existing policies aimed at prohibiting dirty, distributed back-up generators (BUGs) from participating in demand response and recommend concrete steps to enforce these rules.**

Demand response is at the top of the state's "loading order" because it is expected to be both clean and cost-effective. However, use of diesel back-up generators in DR threatens its ability to provide the expected environmental benefits. Plainly, diesel generators are not at the top of the loading order. To enable DR to reach its full potential, California must address the threshold issue of ensuring that it is truly clean.

The state has policies excluding BUGs from DR, however enforcement of these policies is currently unclear. As the CEC outlines strategies to scale up DR, we urge the Commission to recommend steps to ensure that BUGs are excluded.

2. NRDC recommends that the Commission explore and articulate the types of flexible capacity benefits that demand response and energy efficiency can provide in meeting the operational needs associated with high penetrations of variable renewable resources on the grid.

The Commission should continue working on defining specific flexible capacity products that will reliably and cost effectively contribute to meet near- and mid-term forecasted energy system needs identified by the California Independent System Operator ISO (CAISO) in the draft Demand Response and Energy Efficiency Roadmap.¹

Energy efficiency can avoid the need for more expensive generation, capacity and dispatchable resources in the first place, by reducing load altogether and re-shaping the load curve. Targeting certain energy efficiency measures can reduce the need for ramping resources by reducing loads during the months and times when ramping needs are greatest. For instance, residential lighting and street lighting might be particularly valuable resources, by reducing demand during the winter months in the late afternoon and evening hours. LED lights can provide equivalent brightness and color quality at a fraction of the energy required by equivalent incandescent lighting and thereby deliver savings that coincide with the ramping needs of the CAISO "duck curve".

The CEC should work with the ISO to understand when and where load reductions would be most valuable to reduce the need for flexible capacity, and then reflect that value in the cost-effectiveness framework used to evaluate codes and standards. The CEC should similarly work with the CPUC to integrate the value of

¹ CAISO (2013) Draft Demand Response and Energy Efficiency Roadmap: Making the Most of Green Grid Resources.

reducing flexible capacity into the CPUC's cost-effectiveness framework and program planning process.

Demand response can provide a dispatchable resource that meets operational needs, but DR programs and capacity products procured by the utilities or ISO must be defined around what customers will be willing and able to do. If the state's framework for procuring flexible capacity is built around the capabilities of natural gas-fired generators it will exclude most DR by design. Rather than try to shoe-horn other resources into a gas-centric framework, we urge the Commission to explore and articulate the types of flexible capacity benefits that demand response can provide, so that programs and products can be designed to best take advantage of those benefits.

3. NRDC urges the Commission to assist with targeted ramping up of demand response and energy efficiency resources in the wake of the SONGS shutdown.

The retirement of the San Onofre nuclear power plant creates an opportunity to ramp up preferred resources and strengthen the electric grid. The Commission should work with the CPUC and ISO to ensure the state is including the full amount of "reasonably expected to occur" preferred resources in forecasting demand in the area impacted by the SONGS retirement, and to target *additional* preferred resources to meet the remaining need. The state should get started right away in ramping up targeted DR and efficiency savings in the local areas impacted by the SONGS retirement.

4. The Commission should help ensure end-use technologies are ready to be responsive to control and price signals by examining opportunities to integrate DR considerations into its work on appliance standards and building codes.

A future electric grid in which numerous end-uses are able to quickly adjust consumption based on direct signals (without the need for consumer action) will require new technologies. The CEC does extensive work on the future of end-use technologies in adopting appliance standards and building codes, and working with the EPA's Energy Star program and the DOE's appliance standards. We urge the Commission to consider the potential for DR into all of these activities to help ensure end-use technologies are ready to provide demand response.

III. Conclusion

NRDC thanks the CEC for the opportunity to comment on the *Lead Commissioner Workshop on Increasing Demand Response Capabilities in California*. We urge the CEC to explore the authority and enforcement mechanisms to exclude dirty BUGs from DR markets, provide greater insight on the types of flexible capacity needs that DR and energy efficiency resources can meet as more variable output renewable resources come online, to assist with the targeted ramp up of DR and energy efficiency resources in the wake of the SONGS shutdown, and to help ensure end-use technologies are ready to facilitate a growing role for DR in the future.