

**Comments of the Natural Resources Defense Council (NRDC) on the
California ISO Draft Demand Response and Energy Efficiency Roadmap**

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The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer these comments on the California ISO (“ISO”) draft *Demand Response and Energy Efficiency Roadmap: Making the Most of Green Grid Resources* dated June 12, 2013 (Draft Roadmap). 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.

I. Introduction and Summary

NRDC appreciates the ISO’s efforts to proactively plan for the electric system of the future that will be dramatically different in order to meet the state’s long-term greenhouse gas reduction goals. California’s burgeoning growth of renewable resources, led by the nation’s largest and most aggressive suite of policies to deploy renewable energy, offers new and exciting challenges to transform the existing electricity grid to one that is more responsive and flexible, to integrate these resources while enhancing system reliability and resiliency. We are in strong agreement that California should scale up clean, cost-effective, targeted demand response (DR) and energy efficiency (EE) to enable a more intelligent, flexible, and responsive electricity grid to accommodate the higher penetrations of renewable resources. NRDC appreciates the ISO’s commitment to help the state move forward on these critical issues.

NRDC commends the ISO for putting forward a thoughtful and useful Draft Roadmap. In summary, our comments elaborate on the following points:

- Energy efficiency and demand response should be utilized as *top priority* resources consistent with the state’s “loading order,” not only as procurement resources like any other.
- The ISO should assist the CPUC, CEC and utilities with a targeted ramp up of demand response and energy efficiency resources in the wake of the San Onofre nuclear power plant (“SONGS”) retirement.

Energy Efficiency-specific

- The roadmap should acknowledge California’s long history of success with energy efficiency, and highlight the critical role energy efficiency will continue to play in the future.
- The roadmap should fully reflect the joint agreement between the ISO, CPUC and CEC to agree on consistent load forecasts that include all reasonably expected energy efficiency for planning purposes.
- The ISO should collaborate further with the CPUC, CEC and publicly-owned utilities (POU) to better understand the state’s existing policy and planning framework for energy efficiency.
- The ISO, state agencies, utilities and other stakeholders should collaborate to establish a statewide forum of technical experts to vet energy saving estimates in a transparent and collaborative process.

Demand Response-specific

- The roadmap should highlight the need to ensure that DR is truly clean, with clear and well enforced rules against using dirty back-up generators (BUGs) for DR.
- The roadmap should include the process and timeline to define a flexible capacity product definition for DR.
- The ISO should continue to engage in ongoing DR research and planning efforts at the CPUC and CEC to foster new pilot DR and load-based flexible capacity resource programs to gain DR operational experience as soon as possible.
- The roadmap should highlight the importance of ensuring end-use technologies are ready to be responsive to control and price signals, and identify opportunities to integrate DR considerations into existing work on appliance standards and building codes.

II. Discussion

1. Energy efficiency and demand response should be utilized as *top priority* resources consistent with the state’s “loading order,” not only as procurement resources like any other.

The Draft Roadmap’s vision for DR and EE to “become integral, dependable and familiar resources that support a reliable transition to an environmentally sustainable electric power system” is a good start but fails to reflect the state’s “loading order,” which makes these resources the state’s *top* priority. (p. 2) The roadmap’s vision should be to utilize EE and DR in a manner commensurate with their top priority status, not just to use them as resources like any other.

2. The ISO should assist the CPUC, CEC and utilities with a targeted ramp up of demand response and energy efficiency resources in the wake of the SONGS retirement.

The retirement of the San Onofre nuclear power plant creates an opportunity to ramp up preferred resources and strengthen the electric grid in the Southern California region. The ISO should work with the CPUC and CEC to ensure that 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.

Energy Efficiency

3. The roadmap should acknowledge California’s long history of success with energy efficiency, and highlight the critical role energy efficiency will continue to play in the future.

California has maintained a long history (more than four decades) of relying on energy efficiency to lower costs, improve reliability, and reduce the environmental impact of the electric system. State law and the policy of the Public Utilities Commission (PUC) and California Energy Commission (CEC) make efficiency the top priority resource in the “loading order” guiding utility procurement. As a result, California energy consumers benefit by having lower monthly energy bills, breathing cleaner air, saving precious water supplies and reducing greenhouse gas emissions.

California has relied on energy efficiency to avoid investments in traditional infrastructure for many years, and the Draft Roadmap should acknowledge this long history of success (rather than implying it will be possible only in the future). (p. 1) In addition, in describing the Draft Roadmap’s rationale for focusing on energy efficiency, it should highlight that energy efficiency is not just the cleanest resource but also the state’s cheapest resource and has already saved Californians billions of dollars. (p. 3)

In addition, the roadmap should emphasize the full set of benefits that energy efficiency can provide in helping the ISO maintain system reliability. Energy efficiency can both (i) reduce load and avoid the need for more expensive generation, capacity and dispatchable resources in the first place, and (ii) help re-shape the load curve to reduce

ramp rates and flexible capacity needs. 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. The roadmap's introduction should recognize both the opportunity for DR to help meet operational needs, and the opportunity for EE to reduce the need for dispatchable resources by reshaping load. (p. 1)

Energy efficiency programs, codes and standards can be essential contributors to the "load reshaping path" identified in the Draft Roadmap, however the initial summary (p. 3) appears to overlook EE and instead focuses on retail tariff structures. Moreover, the description of the goal of load reshaping appears to be based on the traditional approach of simply lowering peak; however, as the ISO has discussed in numerous forums, the focus in the future will be on *net* load shapes. It will be helpful to have load coincide with renewable generation, which may mean significant load peaks but a flatter *net* load shape. (p. 3) The Draft Roadmap should also explicitly discuss the varying timescales and magnitudes of the different load reshaping options: energy efficiency efforts take more time to implement but can produce larger impacts over time, and market signals can provide near-term impacts. (p. 4)

4. The roadmap should fully reflect the joint agreement between the ISO, CPUC and CEC to agree on consistent load forecasts that include all reasonably expected energy efficiency for planning purposes.

In February 2013, the ISO, CPUC and CEC committed to align their respective demand forecasting and planning processes to properly account for energy efficiency.¹ This was a critical step forward to avoid incomplete analyses of future electricity needs omitting reasonably expected energy efficiency savings. The roadmap should highlight the joint commitment that the ISO and agencies made in February in its discussion of how demand forecasting will evolve. (p. 6) In addition, the roadmap should clarify how the ISO will work with the POUs to ensure load forecasts include all expected EE and DR.

¹ CEC, ISO, CPUC, *Letter to Senators Padilla and Fuller*, February 25, 2013, http://www.caiso.com/Documents/CEC_CPUC_ISO-Response-SenatorsPadilla_Fuller_Feb25_2013.pdf.

5. The ISO should collaborate further with the CPUC, CEC and publicly-owned utilities (POU) to better understand the state’s existing policy and planning framework for energy efficiency.

We appreciate the ISO’s engagement in the Demand Analysis Working Group (DAWG), which is one important part of the state’s framework to utilize energy efficiency as a resource. But there are many other interrelated efforts that should be recognized in the roadmap. For example:

- The CPUC and the POU’s set ten-year energy saving targets, as required by law (AB 2021), that help guide their respective energy efficiency planning and investment strategies. (p. 12)
- Evaluation, measurement and verification of energy efficiency is overseen by the CPUC and the POU’s. (p. 21)
- The CPUC has an extensive tracking system as part of its oversight of the utility programs; additional tracking systems should build on the foundation that already exists. (p. 21)

Moreover, while the DAWG will be helpful in assessing how energy efficiency can help re-shape load, these considerations should be integrated into the state’s EE framework more broadly. (p. 6) For instance, the ISO should clarify when and where load reductions would be most valuable to reduce the need for flexible capacity, and then the CPUC, CEC and POU’s should reflect that value in the cost-effectiveness framework used to evaluate energy efficiency efforts so that it can guide program planning.

6. The ISO, state agencies, utilities and other stakeholders should collaborate to establish a statewide forum of technical experts to vet energy saving estimates in a transparent and collaborative process.

NRDC supports the roadmap’s call for common EE and DR assumptions, supported by analysis using agreed-upon methodologies (p. 9), and a “Monitoring Path” to ensure the resources are on track to meet their objectives (p. 19). The roadmap should recognize the extensive evaluation, measurement and verification (EM&V) framework that the state already has. This offers a good starting point upon which to build. The missing element is a transparent public process to vet the results. We urge the ISO to

work with the CPUC, CEC, utilities and other stakeholders to establish a statewide forum of technical experts to vet energy saving estimates in a transparent and collaborative process. California can learn from models in other regions, including the Northwest and Northeast, to create a transparent process that builds greater confidence in the energy saving estimates.²

Demand Response

7. The roadmap should highlight the need to ensure that DR is truly clean, with clear and well enforced rules against using dirty back-up generators (BUGs) for DR.

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. The roadmap should acknowledge the problem with BUGs being compensated for DR purposes in other domestic capacity markets, and highlight the need to ensure DR is truly clean in California. (pp. 7)

The state has policies excluding BUGs from DR, however enforcement of these policies is currently unclear. The ISO should collaborate with the CPUC and CEC to set in place concrete steps to enforce the prohibition on dirty back-up generators (BUGs) participating in DR.

8. The roadmap should include the process and timeline to define a flexible capacity product definition for DR.

As the Draft Roadmap points out, DR and EE resources are different from generation, but still can provide valuable flexible capacity needs to the system. (pp. 2) One key step to enable DR to provide that flexible capacity will be developing a flexible capacity resource adequacy (RA) product definition for DR. It is not clear, however, if the ISO “initiative” to define a DR standard capacity product (pp. 16) is intended to include an ISO process to develop a flexible capacity RA product. Just as the ISO helped the CPUC

² For more information, see Peter Miller, “Building Confidence in Energy Savings Estimates to Unleash Energy Efficiency,” June 19, 2013, http://switchboard.nrdc.org/blogs/pmiller/building_confidence_in_energy.html.

draft the recently adopted flexible RA product definitions suitable for traditional generation and hydro, the ISO should help develop a proposal for a flexible RA product definition suitable for DR. The Roadmap should include the timeline to develop and finalize the definition.

9. The ISO should continue to engage in DR research and planning efforts at the CPUC and CEC to foster new pilot DR and load-based flexible capacity resource programs to gain DR operational experience as soon as possible.

For example, ongoing research efforts such as the CPUC Demand Response Project Coordination Group (PCG) can help the ISO, state agencies and utilities identify and prioritize immediate DR market research needs that can then help frame new DR pilot program(s) to rapidly gain operational experience. (pp. 16) Additional experience can help inform the state’s efforts to define the DR “product(s)” that it is seeking.

10. The roadmap should highlight the importance of ensuring end-use technologies are ready to be responsive to control and price signals, and identify opportunities to integrate DR considerations into existing 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 state (including the CEC, CPUC and utilities) already engages in 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. The potential to add DR capabilities should be taken into consideration in all of these activities to help ensure end-use technologies are ready to provide demand response. We recommend that the Draft Roadmap highlight the importance of statewide collaboration on these activities to ready end-use technologies to significantly expand DR. (pp. 7 and 17)

III. Conclusion

NRDC thanks the ISO for the opportunity to comment on the draft *Demand Response and Energy Efficiency Roadmap: Making the Most of Green Grid Resources* dated June 12, 2013 (Draft Roadmap). We are in strong agreement that California should scale up clean, cost-effective, targeted demand response and energy efficiency to enable a more intelligent, flexible, and responsive electricity grid to accommodate the higher penetrations of renewable resources. NRDC appreciates the ISO's commitment to help the state move forward on these critical issues and we look forward to further engagement and collaboration with the ISO and fellow stakeholders to successfully implement policies that will meet the new challenges of a reliable, resilient, green and sustainable grid.