

**Comments of the Environmental Defense Fund (EDF) and Natural Resources Defense Council (NRDC) on the California Energy Commission's 2013 Integrated Energy Policy Report Draft Lead Commissioner Report (IEPR), Docket No. 13-IEP-1A**

October 29, 2013

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California Energy Commission

**DOCKETED  
13-IEP-1A**

TN 72306

OCT. 30 2013

EDF and NRDC compliment the California Energy Commission (Energy Commission or Commission) for its work on the IEPR. The draft includes expansive and well-reasoned consideration of demand response's (DR) ability to contribute to grid reliability, ancillary services, renewable integration and customer empowerment, as well as the challenges this resource needs to overcome to reach its full potential. As the Commission notes, "Despite its primary position in the loading order, there has been little progress toward increasing the amount of DR used in the state."<sup>1</sup> However, increasing need for flexible demand side resources triggered by larger amounts of renewable resources, as well as the planned retirement of aging fossil fuel plants, "dictate that DR play a much larger and substantially different role in electricity supply and reliability enhancement than today."<sup>2</sup>

The Commission notes that development of DR resources can reduce the amount of generation and transmission that would otherwise be required as the grid faces changing conditions.<sup>3</sup> Because it can also help reduce wholesale prices when they would otherwise be highest, engaging DR can dramatically lower system costs, as well as -- with the right policy requirements and enforcement mechanisms in place -- reduce air pollution and greenhouse gas emissions.<sup>4</sup> Still, as discussed in the Draft IEPR, DR is an underutilized tool in California's toolbox, particularly as compared with deployment levels in other states.<sup>5</sup> The Commission indicates that the "need to prove DR is urgent."<sup>6</sup> Yet, this resource has already been proven in other parts of the country -- it is the need to significantly increase the use of DR that is urgent.

The Commission has identified the key elements that need to be addressed to immediately scale-up demand response. For example, EDF and NRDC support the Commission's call to update regulatory structures, simplify market requirements for direct participation and by aggregators, increase the prevalence of advance response DR, and reach out to consumers in a targeted manner. Further, we respectfully request that the Commission use its authority, for example over appliance and buildings standards, OpenADR, and electricity forecasting, as well as its communications capacity, to overcome some of the challenges to implementing the state's vision for DR. Additionally, EDF and NRDC recommend the following:

<sup>1</sup> California Energy Commission, 2013 Integrated Energy Policy Report, Draft Lead Commissioner Report, October 2013, <http://www.energy.ca.gov/2013publications/CEC-100-2013-001/CEC-100-2013-001-LCD.pdf>, page 40.

<sup>2</sup> 2013 Integrated Energy Policy Report Draft Page 50

<sup>3</sup> 2013 Integrated Energy Policy Report Draft Page 50

<sup>4</sup> In fact, as noted by the California Counsel on Science and Technology, "if electric generation is predominantly intermittent renewable power, using natural gas to firm the power would likely result in greenhouse gas emissions that would alone exceed the 2050 target for the entire economy."<sup>4</sup>

<sup>5</sup> While a portion of the demand response resources in PJM rely on backup diesel generation, the majority do not. EDF recommends that California expand the use of demand response, as well as clean back-up measures, in ways that help the state meet its clean energy and air policies.

<sup>6</sup> 2013 Integrated Energy Policy Report Draft Page 50

1. Feature Time of Use (TOU) rates more prominently and add a recommendation on the California Public Utilities Commission's (CPUC) Residential Rates Proceeding that supports both DR and energy efficiency. Tariffs are an important medium through which the costs and consequences of electricity use are communicated to ratepayers, and have a demonstrated ability to affect demand.<sup>7</sup> In Southern California Edison's (SCE) service territory, for example, EDF estimates that if just 20 percent of ratepayers adopted the existing voluntary TOU rate, peak demand would fall by almost 630 MW, more than enough to address that utility's uncertain need for 500 MW. If half of SCE's ratepayers adopted the TOU tariff, almost 1,600 MW of peak demand would be avoided, or two-thirds of SONGS' former capacity.<sup>8</sup> EDF recommends that emphasis be added in this chapter to underline the importance of increasing residential consumer education and enrollment in voluntary TOU rates, as well as enabling greater responsiveness amongst all classes of customers by providing them with the technology and information tools they need to respond more easily and effectively to such a rate design (see recommendation #3). In Arizona, incentive/procurement structures have been extremely successful in increasing enrollment in TOU rate schedules.
2. Explicitly link the "Recommendations" provided on pages 50-53 to the "Demand Response Challenges" described on pages 48-50, other issues identified in the chapter, as well as to state energy and environmental policy. It would be helpful for the IEPR to go one layer deeper in its recommendations, explaining the specific steps that should be taken and policy recommendations that should be made by California's energy decision makers to address the issues identified throughout the chapter.
3. Reiterate and expand the DR goal in the Energy Action Plan and Energy Action Plan 2, discussed on page 42 of the Draft. Sacramento Municipal Utility District, for example, set a goal for DR resources to be nine percent of system load by 2021 as being reasonable for the broader California electricity system.
4. Emphasize the importance of leveraging improved technology and learning by doing. As discussed on page 49 of the draft, historically, DR efforts have focused on shutting things down, with concomitant challenges and economic consequences. The IEPR should increase its focus on what is now possible with both tariff-based, "crowd-sourced" DR, and automated DR, such as automatic thermostat controls that move temperatures by one degree or less, compressor cycling and advanced LED controls. Substantial grid and customer benefits could be gained from ensuring that consumers are quickly and dependably able to respond to TOU and other DR signals. For example, financing mechanisms like On Bill Repayment and/or funds and programs run by the Commission could provide automated, set-it-and-forget-it, and direct load control technologies that have the ability to provide real-time DR (as defined by LBNL – see figure below).

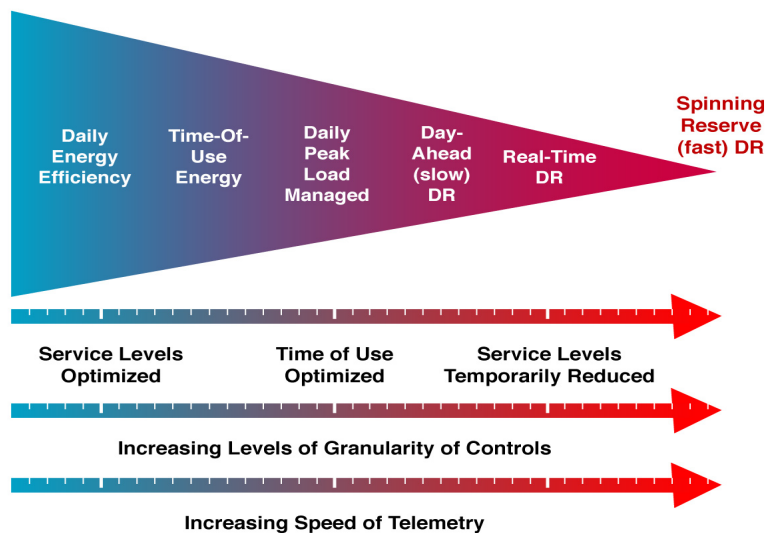
This strategy will continue the progress laid out by LBNL's DR Research Center, while continuing to get more value from the investor-owned utilities' (IOU) smart meter

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<sup>7</sup> See for example, 2013 Integrated Energy Policy Report Draft "DR for residential customers faces some unique barriers not faced by commercial customers, such as lack of time-variant pricing." (page 43).

<sup>8</sup> Residential Rate Design Proposal of Environmental Defense Fund, submitted to the PUC on May 29, 2013, Exhibit A-1, <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M066/K295/66295654.PDF>

deployments. A significant portion of the value proposition offered by smart meters is the ability to use DR, including time-variant tariffs.



Source: “**Emerging Technologies: Low Energy & Demand Response Technologies,**” Mary Ann Piette, Director, Demand Response Research Center, Head, Building Technology and Urban Systems, Lawrence Berkeley National Laboratory, presented at Peak Load Management Association Annual Conference, San Diego, November, 2012.

5. Include a section on demand response untapped opportunities to meet system needs. In addition to energy efficiency, DR is a resilient demand side resource that reduces the need for flexible resources. For example, combinations of demand response – including incentives to charge electric vehicles when solar output is high, well-structured tariffs and new twists on traditional demand response would go far in addressing needs for flexible capacity, by both inducing different behaviors in energy users and incenting new seamless technologies.
6. Recommend that pilots be structured as “soft launches,” fully scalable if successful, as well as contribute information that can serve as the basis for probabilistic modeling used as a decision making tool in regulatory proceedings. EDF and NRDC encourage the Commission to promote pilots that mirror private sector efforts to test new products and concepts as part of launch strategies. In other words, as in the high-technology sectors, rather than being seen as “contributing to the literature,” pilots should be designed for immediate scalability if they meet certain criteria (e.g., cost-effectiveness). In addition, where possible, pilot data should be developed in such a way as to inform decision methods, with a focus on how DR can help ensure grid reliability.
7. Ensure that effective enforcement mechanisms are established in prohibiting the use of diesel back-up generators in DR. The consequence of not doing so threatens the ability of DR to provide the expected environmental benefits.

In addition to these comments on DR (Chapter 2), EDF and NRDC believe that other chapters could be strengthened, especially Chapter 4. In particular, the Draft IEPR could be improved by:

- 1) Including all preferred resources that reasonably expected to occur in the IEPR demand forecast. Currently, the IEPR demand forecast excludes all additional achievable energy efficiency, which is approximately 5,000 MW in 2024 in the Mid Case scenario. Additionally, all relevant regulatory agencies should adopt a unified forecast as soon as possible in order to be incorporated into current procedural schedules (e.g., CPUC 2012 Long Term Procurement Plan and Resource Adequacy proceedings), and to ensure that future forecast can be agreed upon rapidly;
- 2) Exploring a preferred resources plan to continue to ensure electricity reliability in Southern California, which includes increased levels of energy efficiency, demand response, strategically placed storage, and more renewables, offsetting combustion resources.
- 3) Giving greater consideration to the potential synergistic effects of fast, inexpensive, frequent DR in coordination with energy efficiency, storage and self-generation. The potential to co-locate these resources in ways that provide system reliability benefits remains largely unexplored. In this respect the Commission should re-approach the concept of IDSM as one that is based on enlivening energy efficiency investments with DR capabilities. For example, DR strategies like pre-cooling are more effective if they are executed alongside energy efficiency investments. Likewise, high efficiency LED lighting – or compressors – can be made even more valuable if linked to TOU and other DR tariffs.

EDF and NRDC reiterate their support for the draft of Chapter 2 on DR and thank the Commission for considering these recommendations.

Best regards,

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