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NRDC Comments on the Workshop on Assumptions for IEPR Modeling and Forecasting Activities

Additional submitted attachment is included below.

**Comments of the Natural Resources Defense Council (NRDC) on the
2015 Integrated Energy Policy Report (IEPR)
Workshop on Assumptions for IEPR Modeling and Forecasting Activities**
Docket Number 15-IEPR-03
March 11, 2015
Submitted by: Christa Heavey and Sierra Martinez

I. Introduction and Summary

The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer these comments on the 2015 IEPR Workshop on Assumptions for Modeling and Forecasting Activities on February 26, 2015. NRDC is a non-profit membership organization with more than 80,000 California members who have an interest in receiving affordable energy services while reducing the environmental impact of California's energy consumption.

II. Discussion

NRDC greatly appreciates the effort of the Energy Commission staff during the 2015 IEPR effort to create a thorough and reliable electricity and natural gas demand forecast. NRDC thanks the Commission for the opportunity to participate in the workshop on the inputs and assumptions for the demand forecast. We respectfully offer these comments on the workshop and the demand forecast.

A. NRDC applauds the Commission for its inclusion of energy efficiency savings from publicly-owned utilities in the 2015 demand forecast for Additional Achievable Energy Efficiency (AAEE).

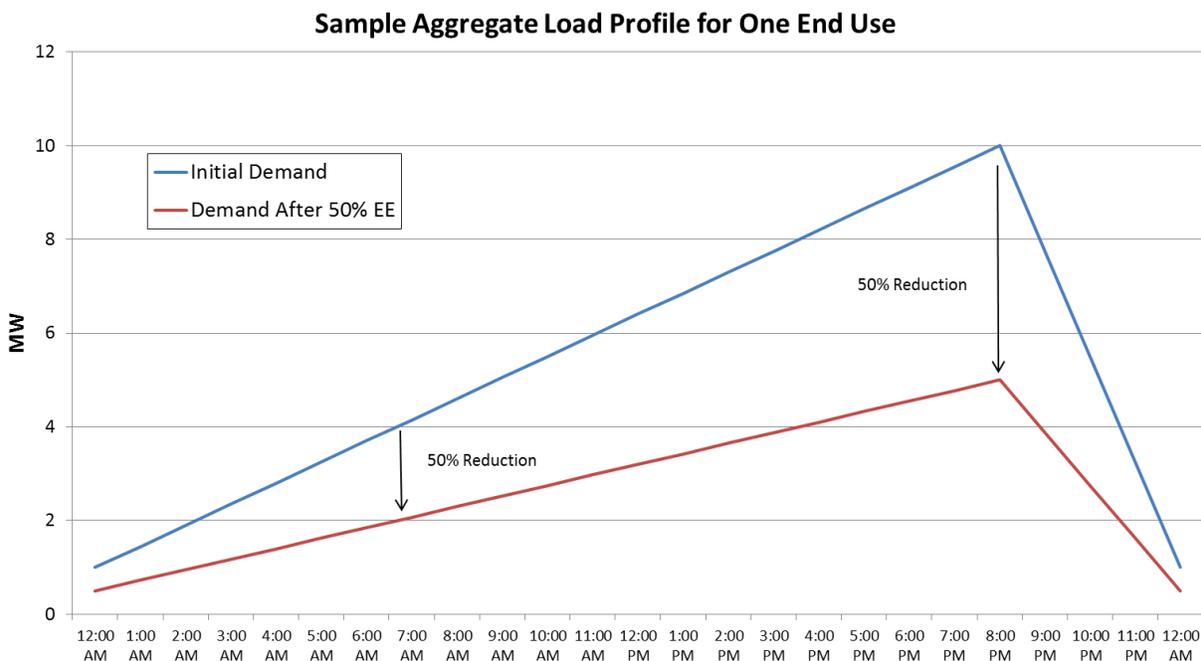
In previous forecasts, future savings for publicly-owned utilities were not used in AAEE savings, thus underestimating the overall efficiency savings that could be used for planning purposes. The Commission's inclusion of efficiency savings from the publicly-owned utilities, which will be based on the utilities' ten-year efficiency goals, in AAEE will make the 2015 forecast for the next ten years more reliable and accurate.¹

B. NRDC recommends that the Commission forecast energy efficiency with hourly load shapes as this will help with long term planning efforts to integrate renewable energy resources.

¹ We also note that the new AAEE estimate will provide an improved basis on which to measure the Governor's goal of doubling energy efficiency in the state. An AAEE estimate that includes POU's will be a more accurate assessment of what to double over the next fifteen years.

We recommend that the Commission include hourly forecasts of energy efficiency savings within the demand forecast. Because energy efficiency measures save energy at different times of the day and different times of the year, they have different impacts on the shape of the load curve for any particular hour in the year. It is important to consider how efficiency can change the shape of a load curve for planning purposes.

For example, a sample aggregate load profile for one end use is drawn below (i.e. a load curve for residential lighting, simplified for demonstrative purposes). If an efficiency measure reduces the demand for the device by 50 percent, the load curve is not uniformly shifted downward, but rather, bent downward disproportionately according to usage patterns throughout the day. In this example, more aggregate energy is saved in the evening hours, but it is especially important to note the change in the load shape – the ramp rate is less steep than it was before the 50 percent efficiency savings. Here is an illustrative drawing of how accounting for hourly impacts of various efficiency measures results in “re-shaping” the load curve,² not simply shifting it downward.



Including the distribution of the total energy efficiency impacts in the forecast for all 8,760 hours in a year is critical to planning for the integration of even higher levels of renewable

² This strategy is included in the California ISO’s roadmap on energy efficiency deployment and forecasting: “The ISO sees great potential benefits that can be realized through a proactive approach that targets EE programs by using incentives to reshape the load profile” California Independent System Operator, *Demand Response And Energy Efficiency Roadmap*, p.5 (December 2013). Available at: <http://www.caiso.com/documents/dr-eeroadmap.pdf>.

energy on the electric grid. As more solar energy is added to the electric grid and to homes, the “Duck Curve” predicts a steeper evening net peak ramp. More information on the time of day that the planned energy efficiency measures will save energy will allow planners to better meet the needs of that steep evening ramp rate. And because “evening peaking” efficiency mitigates that ramp, as seen in the example above, the Commission’s improved forecast could lead to future adjustments in the portfolio of efficiency programs. We recommend that the Commission improve temporal granularity in the forecast with better understanding of how efficiency can shift load curves, which will bring greater confidence to procurement planning and increase the reliability of the electric system.

C. NRDC recommends that the forecast include greater granularity on locational impacts of efficiency savings.

NRDC appreciates the use of AAEE savings in the managed forecast used for planning purposes and the forecast’s look at demand in individual service territories. However, we urge the Commission to increase the forecast by providing more local forecasts than just service territory wide. Greater detail of efficiency savings by location can allow resource planners to better predict the demand in specific locations within each service territory. This increased specificity in the local forecast will allow a higher level of energy efficiency savings to be used in determining local capacity requirements (LCR). Presently, LCR determinations are using a lower level of energy efficiency due to the lower certainty surrounding local impacts. In order to arrive at one truly common estimate of energy efficiency among agencies, this Commission should work toward creating local efficiency forecasts that can be used with the same confidence levels as system-wide efficiency forecasts.

III. Conclusion

Thank you for the opportunity to comment on the 2015 IEPR Workshop on Assumptions for Modeling and Forecasting Activities. NRDC applauds the Commission for its commitment to creating an accurate and reliable demand forecast and for its inclusion of energy efficiency savings. We look forward to working with the Commission staff and stakeholders on the 2015 IEPR and the demand forecast.