Comments of the Natural Resources Defense Council on the *Lead Commissioner Workshop on Revised Electricity and Natural Gas Demand Forecasts 2014-2024*
CEC 2013 Integrated Energy Policy Report, 13-IEP-1D
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Submitted by: Sierra Martinez and Maria Stamas

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 Revised Electricity and Natural Gas Demand Forecasts 2014-2024* of October 1, 2013 (Revised Forecast Workshop), and the Draft Staff Report, *California Energy Demand 2014–2024 Revised Forecast* (Revised Forecast). NRDC is a non-profit membership organization with interests in minimizing the societal costs of the reliable energy services that Californians demand. We appreciate the CEC's work, along with the California Public Utilities Commission (CPUC) and California Independent System Operator (CAISO), to coordinate one energy efficiency issues throughout the year. Our comments are summarized as follows:

- We recommend that the CEC work with the CPUC and CAISO to fulfill their commitment to: "us[e] one demand and additional achievable energy efficiency forecast . . . during the Integrated Energy Policy Report proceeding."
- We urge the CEC and joint agencies to fulfill this commitment as soon as possible to avoid the risk of overprocurement in the CPUC's decision in Track 4 of the Long term Procurement Proceeding.
- We also recommend that the CEC and joint agencies propose a single draft forecast as soon as possible in order to allow for meaningful public feedback.
- We urge the Commission to include all reasonably expected energy savings in its Final Demand Forecast, in both investor-owned and publicly-owned utility planning areas.

II. Discussion

1. **We recommend that the CEC work with the CPUC and CAISO to fulfill their commitment to: "us[e] one demand and additional achievable energy efficiency forecast . . . during the Integrated Energy Policy Report proceeding."**

We urge the Commission and joint agencies to decide upon a single demand forecast that includes expected energy efficiency as soon as possible and as committed to earlier this year. In February 2013, the CEC, CPUC, and CAISO agreed to make significant changes to their respective planning processes in order to come to agreement on a single forecast that includes energy efficiency savings: "We will increase the transparency of and coordination between our respective procurement and transmission planning processes by using one demand and additional achievable energy efficiency forecast that will be developed with CAISO and CPUC input during the Integrated Energy Policy Report proceeding."[1] The joint agencies made clear that this would be a single forecast case that would include additional achievable energy efficiency.[2] In the past, each entity used their own forecasts, for the biennial IEPR report, for transmission plans, and for procurement decisions, but some omitted energy savings from future energy efficiency efforts altogether. Thus, the agencies' commitment to produce a single forecast that includes a reasonable amount of future energy efficiency savings is an important step forward.

2. **We urge the CEC and joint agencies to fulfill this commitment as soon as possible to avoid the risk of overprocurement in the CPUC's decision in Track 4 of the Long term Procurement Proceeding.**

At the October Revised Forecast Workshop, the CEC did not propose a single agreed upon forecast. Instead, the Revised Forecast offers six different possible forecasts, one of which contains zero future energy efficiency (called the "Base Forecast") which is contrary to State law and to the agencies' commitment to include future energy efficiency savings. Consequently, we urge the CEC and the joint agencies to propose a single

[1] B. Weisenmiller, M. Peevey, S. Berberich, Letter to the Honorable Alex Padilla and the Honorable Jean Fuller, p. 6 (February 28, 2013) [hereinafter "Padilla/Fuller Letter"].
[2] "As noted above, the agencies will work together in each IEPR cycle to arrive at a single recommended forecast that encompasses both the CEC adopted electricity demand forecast and the CEC adopted additional achievable energy efficiency forecast." *Id.* at 3.

demand forecast that includes a reasonable amount of future energy efficiency savings as soon as possible.

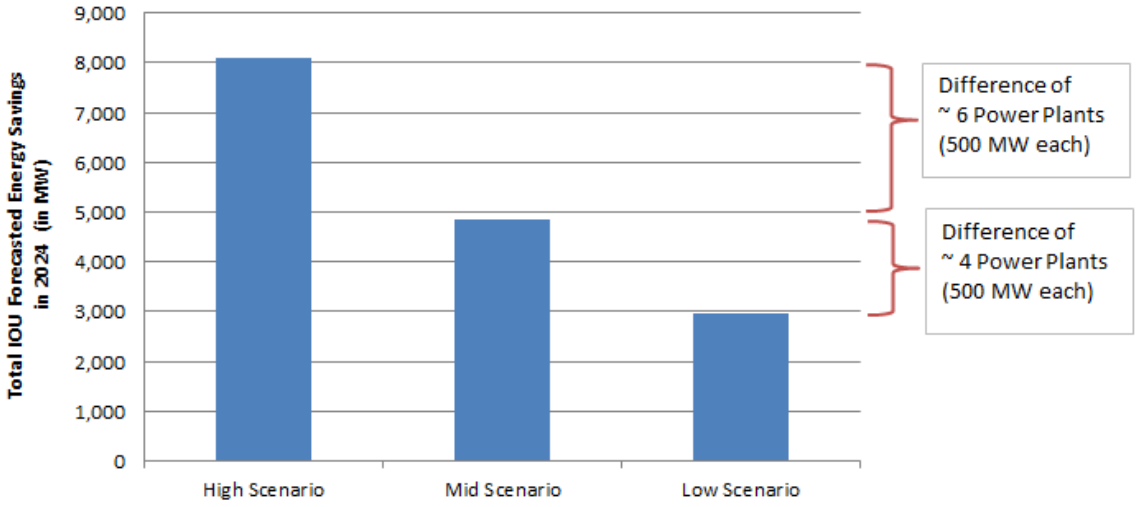
Timeliness of this joint forecast is critical to avoid the risk of authorizing unneeded power plants in the CPUC's long term procurement proceeding. In the February 2013 letter to Senators Padilla and Fuller, the joint agencies committed to agree upon a single forecast by November 2013.[3] The purpose of the joint forecast was to inform procurement plans and avoid the procurement of unnecessary power plants.[4] Subsequently, in May 2013, the CPUC opened a new procurement process in order to address local procurement needs in Southern California (Track 4 of the Long Term Procurement Plan proceeding, R.12-03-014). In order to meet the original commitment, and in order to impact the procurement plans for Southern California, the CEC and joint agencies should release a proposal for the joint forecast as soon as possible.

In the CPUC's Long Term Procurement Proceeding, the current schedule is set to decide whether any, and if so how many, new power plants will need to be built in Southern California (Track 4) as early as December 2013 or the first quarter of 2014. This procurement process was opened after the joint agencies' commitment in the Padilla/Fullerton letter. However, any delay in the CEC's final demand forecast runs the risk that the CPUC may not benefit from the use of the updated forecast in its final decision. As shown in Figure 1, the difference of estimated needs among the investor-owned utilities due to the differences in the CEC's various forecasts could be the equivalent of ten large power plants (500 MW each). Therefore, it is critical that the Energy Commission fulfill their commitment as soon as possible in order to avoid the risk of over building power plants in California.

[3] "November 2013: . . . The three agencies agree on a single forecast case, including additional achievable energy efficiency, . . ." *Id.* at Attachment 1: Schedule for 2013 IEPR, at A-1.

[4] "[I]t is crucial to appropriately and consistently consider energy efficiency savings in energy forecasting, electricity procurement planning, and transmission planning to avoid over- or under-building the electricity infrastructure, . . ." *Padilla/Fuller Letter* at 1.

Figure 1: Underestimating Energy Savings Has Significant Consequences[5]



3. **We also recommend that the CEC and joint agencies propose a single draft forecast as soon as possible in order to allow for meaningful public feedback.**

We appreciate the agencies' efforts to work together on energy efficiency forecasting. However, the six options that the CEC has proposed do not narrow the range of options, especially since a forecast of zero energy savings from future efforts (contrary to state law) is still on the table. With six different options and no joint recommendation, it is difficult for the agencies to receive meaningful feedback from stakeholders on whichever option will become their proposal for a final joint forecast. The joint agencies noted in the Padilla/Fullerton letter that February 19, 2013 would be the first opportunity for stakeholders to provide feedback on the CEC's demand forecast.[6] However, at that workshop, the CEC stated that they had not yet included any future EE in the forecast.[7] Now, in October 2013, the CEC still has not presented a proposal for a single "best estimate" forecast that includes future energy efficiency. Therefore, the agencies should put forth a common recommendation for a forecast that includes all reasonably expected energy savings as soon as possible and provide an opportunity for public input.

[5] Data from: *CEC Revised Forecast*, Table 2: Combined IOU AAEE Savings by Type, 2024, p. 5.
[6] "February 19: IEPR workshop on economic, demographic, and energy price inputs for electricity, natural gas, and transportation fuel demand forecasts. This represents the first opportunity for stakeholder comment on the CEC staff 2014-2022 modeling input assumptions."
[7] "Uncommitted efficiency impacts are not estimated for this report; staff analysis for this purpose will follow later in 2013." CEC, *California Energy Demand 2014-2024 Preliminary Forecast*, p. 5 (May 2013).

4. **We urge the Commission to include all reasonably expected energy savings in its Final Demand Forecast, in both investor-owned and publicly-owned utility planning areas.**

Reasonably Expected To Occur Savings for IOUs

The CEC should include all reasonably expected energy savings in its final demand forecast because it impacts the decisions in long term infrastructure planning, as the CEC recognized in its February 2013 commitment.[8] Among the six options that the CEC presented at the Revised Forecast, NRDC recommends that CEC adopt the Mid Case Scenario of energy efficiency savings at a minimum for investor-owned utility energy savings. It is exceedingly reasonable, because it is a conservative estimate of future energy savings. In fact, the experts that developed the models underlying this "Mid Case Scenario" called this estimate "conservative" at the Revised Workshop.[9] As we elaborate further below, the Mid Case Scenario is conservative because it (i) assumes that utilities' efficiency programs never improve over time, (ii) excludes all future adopted federal appliance efficiency standards, (iii) does not include the full potential from retro-commissiong of buildings, and (iv) only includes a subset of all emerging technologies, and derates the savings of those emerging technologies based on "risk adjustment factors." For all these reasons, it is critical that the CEC include the Mid Case Scenario of energy efficiency, at a minimum, in its Final Demand Forecast for the IOUs.

First, the Mid Case Scenario is based on Navigant's potential study,[10] which assumes that utility energy efficiency programs never improve over time. In the potential study, Navigant held three factors constant: i) consumer attitudes; ii) program efficacy and budget; and iii) program priorities.[11] In Navigant's words, assuming that none of

[8] "[The joint agencies] agree that it is crucial to appropriately and consistently consider energy efficiency savings in energy forecasting, electricity procurement planning, and transmission planning to avoid over- or under-building the electricity infrastructure . . . ." Padilla/Fuller Letter, p. 1.

[9] " . . . I've always considered that the Mid case is a fairly conservative look going forward." CEC, Revised Forecast Workshop Transcript, p. 93 (October 1, 2013).

[10] CPUC/Navigant, *2013 California Energy Efficiency Potential and Goals Study Final Draft Report* (August 2013).

[11] "Calibration can limit market potential for measures . . . . Although calibration provides a reasonable historic basis for estimating future market potential, past program achievements may not perfectly indicate the full potential of future programs. Calibration can be viewed as holding constant certain factors that might otherwise change future program potential, such as: Consumer values and attitudes toward energy efficient measures, Program efficacy in delivering measures, Program budgets and priorities." CPUC/Navigant, *2013 California Energy Efficiency Potential and Goals Study Final Draft Report*, p. 47 (August 2013).

these factors improve over time: "can suppress future potential."[12] The overall result of using Navigant's methodology is that their final estimate "serves as the floor for [efficiency] potential."[13] Because of the methodological decision to prevent programs from improving over time, the estimates of projected efficiency in the potential study are overly conservative and are more than reasonably likely to occur.

Second, the Mid Case scenario assumes that no new federal appliance standards get adopted in the future. This assumption is unrealistic and actual savings are guaranteed to be higher than zero savings from future federal appliance standard. In fact, the U.S. Department of Energy has completed two new final federal standards in this year alone: the 2013 microwave efficiency standard and 2013 commercial air conditioner and heat pump efficiency standard;[14] yet neither of these standards were not included in Navigant's potential study, and thus are excluded from the CEC's Mid Case Scenario as well. In addition, there are a slew of other standards at various stages of development, for example: commercial refrigeration equipment, walk-in coolers and freezers, battery chargers and external power supplies, and electric motors.[15] Assuming that there will be no new federal appliance standards is extremely conservative.

Third, the Mid Case scenario omits a significant amount of savings from operational savings like retro-commissioning of buildings. The totality of behavioral and operational savings were originally omitted in the Navigant potential study because it was difficult to assess the savings at the individual end use, as well as to understand how they scale across sectors.[16] However, their impacts are significant, as the potential study experts testified at the Revised Forecast Workshop: "I suspect that there's upwards of 30 percent additional yield in terms of additional efficiency that can be achieved through just

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[12] Navigant, *CPUC Potentials, Goals and Targets (PGT) Study Update*, Presentation to the Demand Analysis Working Group (DAWG) of Preliminary Results, slide 104 (May 2013).
[13] *Id.* at 105.
[14] For recently passed standards, see: Appliance Standards Awareness Project (ASAP), *National Standards*, Residential and Commercial sectors (accessed September 25, 2013). Available at: www.appliance-standards.org/national.
[15] For future federal standards expected to produce savings in California, see: ASAP, *State-Level Benefits from Potential National Appliance Standards*, Residential and Commercial (accessed September 25, 2013). Available at: http://www.appliance-standards.org/sites/default/files/fedappl_ca.pdf.
[16] "The potential for savings that result from changes in behavior, or how equipment is operated, has only limited representation in this model. Examples of these types of conservation-oriented savings include a resident adjusting the thermostat in their home to reduce the number of hours a heating, ventilating, and air-conditioning (HVAC) system might run, or a re-commissioning activity designed to establish an efficient operating schedule for the HVAC and lighting systems in an office building." CPUC/Navigant, *2013 California Energy Efficiency Potential and Goals Study Final Draft Report*, p. 13 (August 2013)

better management practices." Thus, the CEC Mid Case Scenario plainly does not include the full amount of savings from behavioral and operational programs.

Fourth, the savings from emerging technologies in the CEC Mid Case Scenario account for only a subset of the total amount of savings from emerging technologies. (Emerging technologies are energy saving technologies that might have a small portion of market share today but are still maturing; for example, LED technology is the largest emerging technology included in the study.) Navigant was able to study only a limited number of emerging technologies given resource constraints, including savings from only 31 emerging technologies out of a total of 90 "high potential" emerging technologies, and out of a total 800 general emerging technologies.[17] In addition to using only a subset of the total amount of savings from emerging technologies, the amount of savings from that subset of selected emerging technologies was further reduced according to a "risk factor" of the likelihood of the technology succeeding.

For all of these reasons, the Mid Case Scenario is an extremely conservative estimate of the likely savings in the IOU territories, and is the minimum the CEC should use in the final demand forecast.

Reasonably Expected To Occur Savings for POUs

For the publicly-owned utilities, the Mid Case Scenario should be changed to include the POUs' ten-year targets, which are reasonably expected to occur. Currently, the CEC Mid Case Scenario excludes the vast majority of savings from future POU efficiency programs. POUs conducted long term energy efficiency potential studies this year, and submitted the results to the CEC in March 2013. POUs expect to save over 1,300 MW over the next ten years through their energy efficiency programs.[18] Their estimate is conservative, only seeking to achieve less than half of the cost-effective savings available.[19] However, the CEC's Mid Case Scenario currently excludes the vast

[17] 31 emerging technologies shown Navigant's appendix on emerging technologies: CPUC/Navigant, *2013 California Energy Efficiency Potential and Goals Study Final Draft Report*, Appendix A: Emerging Technologies, Table A-6. Measure-Level Details of ETs Included in the 2013 Potential and Goals Study (August 2013). 90 high potential ETs and 800 general ETs presented in Navigant's previous survey of ETs: "To assess the potential of emerging technologies, Navigant examined 800 possible emerging technologies and identified and assessed 90 technologies as 'high potential.'" CPUC/Navigant, *Analysis To Update Energy Efficiency Potential, Goals, And Targets For 2013 And Beyond*, p. 9 (May 8, 2012).

[18] CMUA/NCPA/SCPPA, *Energy Efficiency In California's Public Power Sector- A 2013 Status Report* (March 2013).

[19] POUs estimated that the total amount of cost-effective savings were over 3,300 MW over ten years. *Id.*

majority of the POUs' savings, only including one out of these ten years of savings. Using only one of ten years is unreasonably low, making it critical that the CEC include the reasonable estimate for the full ten years of future energy savings from POU programs.

III. Conclusion

NRDC thanks the CEC for the opportunity to comment on the *Lead Commissioner Workshop on Revised Electricity and Natural Gas Demand Forecasts 2014-2024*. We thank you for considering our recommendations.