

**Comments of the Natural Resources Defense Council (NRDC) on  
Energy Efficiency and Forecasting**

Docket Number 08-IEP-1

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Submitted by:

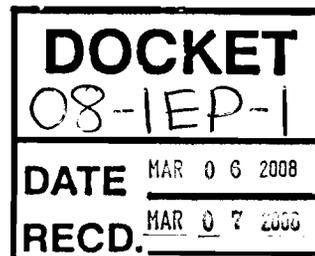
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**I. Introduction and Summary**

The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer these responses to questions posed for the upcoming California Energy Commission (CEC) Integrated Energy Policy Report (IEPR) Committee Workshop on *Energy Efficiency and Forecasting* to be held on March 11, 2008. NRDC is a nonprofit 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 more than 124,000 California members' interest in receiving affordable energy services and reducing the environmental impact of California's energy consumption.

NRDC commends the Energy Commission staff for holding this workshop to clarify and quantify the amount of embedded energy efficiency in the demand forecast. We appreciate staff's hard work and initial efforts to provide this clarification in the latest revision (November 2007) of the "California Energy Demand 2008-2018 Staff Revised Forecast"<sup>1</sup> (Demand Forecast). Delineating the amount of energy efficiency currently embedded in the Demand Forecast will allow for more accurate and consistent modeling of energy efficiency in the various planning processes currently underway throughout the state. We look forward to discussing our comments at the workshop on March 11, 2008. Our comments are organized in response to the questions posed in the workshop notice, and are summarized below.



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<sup>1</sup> California Energy Demand 2008-2018 Staff Revised Forecast, Staff Final Report, CEC-200-2007-015-SF2, November 2007.

### **Summary of Recommendations:**

- NRDC suggests that the ongoing effects of historical energy efficiency standards and programs as well as new standards and programs be further clearly delineated and quantified for the various agencies that use the demand forecast in their planning processes.
- NRDC recommends that the definition of energy efficiency embedded in the forecast be performed both (1) qualitatively, in describing the demand forecast, and (2) quantitatively, such that the appropriate results can flow through to any analysis in which future energy efficiency is assumed to reduce the energy demand (or GHG) forecast.
- NRDC recommends that CEC take a leadership role to establish common assumptions that can be used consistently across all agencies thereby avoiding the current discrepancy of assumptions among agencies using the demand forecast
- NRDC urges the CEC to analyze the amount of natural gas efficiency impacts embedded in the forecast.
- The current demand forecasting model may need to be reevaluated to ensure accurate accounting of the effects of energy efficiency programs, codes, and standards.
- NRDC recommends that the CEC coordinate closely with CARB and CPUC to establish the appropriate timeline to revise the demand forecast and provide delineated data available in a format that can be easily incorporated into a variety of analyses. While ideally the revised demand forecast would be available in a few months, this may need to be extended if the CEC determines the need for a new model.

## II. Discussion

1. *How are the demand forecasts used in other venues? Are there issues associated with the forecasts and those uses? How can forecast use in these other venues be coordinated to reflect collaborative understanding of how to use the forecasts?*

The California Energy Commission (CEC) demand forecast is used in a variety of venues. The following entities, among others, use the forecast to inform their modeling and planning efforts:

- a. California Air Resources Board (CARB) for the modeling of AB 32 implementation, and in particular modeling of business-as-usual (BAU) greenhouse gas emissions forecasts.
- b. California Public Utilities Commission (CPUC) and CEC for the modeling of potential greenhouse gas regulations and emission reduction strategies for the electric and natural gas sectors.
- c. Investor-owned utilities (IOUs) and CPUC for their long-term procurement planning (LTPP)
- d. CEC and publicly-owned utilities (POUs) for the AB 2021 energy efficiency goal setting process.

There are discrepancies among the uses of the forecast due to varying assumptions of how much energy efficiency is embedded within the demand forecast. This creates confusion and possible inaccuracies depending on which assumptions are used for analysis. For example, the Energy and Environmental Economics (E3) modeling of greenhouse gases in the electricity and natural gas sectors for the CPUC/CEC assumes that the CEC demand forecast includes future or ‘uncommitted’ EE savings and therefore does not include additional EE savings when running their reference cases. As a result, their analysis shows that the energy load in California is expected to increase an average of 1.2% per year.<sup>2</sup> In contrast, the CEC’s AB 2021 report does *not* assume that future or ‘uncommitted’ EE savings are embedded in the forecast. Therefore, when analyzing the effects of adopting the goal of all cost-effective energy efficiency potential, the results

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<sup>2</sup> Energy and Environmental Economics (E3). *Attachment B: CPUC GHG Modeling Stage 1 Documentation*; November 2007. p. 48

show that California will have a negative energy load growth forecast.<sup>3</sup> This example illustrates the differing assumptions used in various forums and highlights the importance of clarifying the actual amount of EE that is embedded within the demand forecast. NRDC recommends that the CEC take a leadership role to establish common assumptions that can be used across all agencies as well as to coordinate closely with CARB and CPUC to design a demand forecast that can provide accurate and consistent data available in a variety of formats available for the various forums that utilize the demand forecast.

In addition, if the historical and future effects of energy efficiency programs and standards are not explicitly clear in the demand forecast, it will make establishing a transparent BAU greenhouse gas emissions forecast extremely difficult. This in turn will lead to inaccuracies in determining the amount of reductions and strategies necessary to achieve the 2020 statewide limit. Furthermore, if the demand forecast includes significant amounts of future uncommitted energy efficiency but is not clear in defining and quantifying what degree energy efficiency is included, determining the true effect of future energy efficiency efforts compared to BAU will be impossible.

Similarly, the CPUC/CEC greenhouse gas modeling depends on clearly defining the amount of energy efficiency embedded in the demand forecast. Without accurate information, it will be difficult to determine the greenhouse gas emission reduction benefits of future energy efficiency programs. In order to be most informative, it is important that the CPUC/CEC modeling be consistent with other similar modeling efforts, particularly at CARB.

The CPUC and IOUs use the demand forecast as the basis for their long-term procurement planning process. As such, the amount of energy efficiency embedded within the forecast has significant impact on planning for sufficient electricity supply resources. Depending on the assumptions of energy efficiency embedded in the demand forecast that is used for procurement planning, the IOUs could either over-plan or under-plan for supply resources. As the amount of needed resources would be significantly different depending on the amount of embedded energy efficiency in the forecast, the

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<sup>3</sup> California Energy Commission, *Achieving All Cost-Effective Energy Efficiency for California*, Publication 200-2007-019-SF, December, 2007, p.26 & pp 103-104.

IOUs will have difficulty developing an accurate and reliable long-term procurement plan.

The CEC and POU's also use the demand forecast when developing long-term energy efficiency goals as required by AB 2021. If the embedded energy efficiency is not clear, the effect of the POU goals on their expected demand growth will be uncertain, also affecting the accuracy of their procurement planning.

Currently, there is inconsistency and uncertainty among the state agencies about how to use the demand forecast and the assumptions about energy efficiency. By increasing the collaboration among the key agencies using the forecast for a variety of purposes, the CEC can ensure that the demand forecast will provide the necessary information to ensure accurate analyses across the state for energy and climate policy and planning. NRDC recommends that the CEC coordinate closely with CARB and CPUC to understand the various uses of and needs for the demand forecast, explore what improvements can be made to the existing model to address these needs, and evaluate whether the existing model will adequately address these needs. The end goal of this effort should be to provide a demand forecast with energy efficiency information in a format that can be easily incorporated into a variety of analyses.

- 2. What additional information or analysis would parties like to see? What data are needed to conduct this analysis? Can these questions be effectively answered with the demand forecast or are new tools needed?*

The need to clarify the level of energy efficiency embedded in the demand forecast pertains not only to the ongoing effects of *historical* energy efficiency standards and programs, but also to the *new* standards and programs (updates to Title 24 and 20, as well as the adopted and extended energy savings goals for both the IOUs and POU's) that will be implemented in the future and serve as the cornerstone of California's greenhouse gas emission reduction efforts under AB 32.

NRDC appreciates the staff's efforts thus far to further delineate the embedded energy efficiency in the demand forecast. The latest staff revised demand forecast from November 2007, described to only include the historical energy efficiency impacts, or

“committed”<sup>4</sup> energy efficiency, does in fact include some amount of predicted energy efficiency from upcoming programs as well as codes and standards, or “uncommitted”<sup>5</sup> energy efficiency. However, it still remains unclear not only how much historical energy efficiency is embedded, but also how much of the uncommitted energy efficiency (not intended to be in the forecast) is in fact embedded within the forecast. We need a better understanding of how the ‘committed’ and ‘uncommitted’ energy efficiency savings are delineated and how the forecast would look without each of these components.

The staff’s discussion and assessment of conservation impacts in the demand forecast focus exclusively on electricity energy efficiency. No discussion is included about natural gas efficiency impacts embedded in the forecast. It is equally important that the amount of natural gas energy efficiency savings included in the natural gas forecast be clearly identified. NRDC urges the Commission to include such an analysis as soon as possible.

We emphasize that the definition of energy efficiency embedded in the forecast must be performed both (1) qualitatively, in describing the demand forecast, and (2) quantitatively, such that the appropriate results can flow through to any analysis in which future energy efficiency is assumed to reduce the energy demand (or GHG) forecast.

As the use of the demand forecast has changed over the past few years with the passage of AB 32 and other greenhouse gas and energy saving target proceedings, the current model may need to be reevaluated. This will ensure detailed accounting of the effects of energy efficiency programs, codes, and standards and also allow for accurate information to be available in a format that can be easily incorporated into a variety of analyses. The need for clearly delineated ongoing historic energy efficiency effects as well as the predicted effects due to upcoming energy efficiency programs and standards is also needed to address the range of targeted analyses.

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<sup>4</sup> “Committed programs are defined as programs that have been implemented or which funding has been approved.” California Energy Demand 2008-2018 Staff Revised Forecast, Staff Final Report, CEC-200-2007-015-SF2, November 2007. p.25

<sup>5</sup> “Uncommitted effects are thus defined as the incremental impacts of the level of future programs (for example, savings associated with new equipment that exceeds current standards or early replacement of existing stock), impacts of new programs, and impacts from expansion of current programs.” California Energy Demand 2008-2018 Staff Revised Forecast, Staff Final Report, CEC-200-2007-015-SF2, November 2007. p.25

3. *How would that additional information or analysis be used? What entity would use the results, and when is it needed?*

The assumptions of specific energy efficiency savings that are embedded in the demand forecast are essential to inform accurate uses of the forecast for modeling and planning purposes, many of which need this information as soon as possible in the next couple of months. Each of the processes noted above relies on the CEC demand forecast, and each also needs to make assumptions about how future energy efficiency savings (through standards and/or programs) will affect that forecast. If the demand forecast fails to adequately quantify the amount of energy efficiency embedded within it, the results of all these other analyses will be inaccurate. However, if the CEC establishes clear assumptions about the embedded energy efficiency in the demand forecast, the modeling and planning processes among the various agencies will be consistent and better able to accurately inform the state's policy development.

The various forums noted above will use the revisions of the demand forecast to inform their analysis. In particular, CARB will use this information to clearly delineate what the expected business-as-usual greenhouse gas emissions will be from electricity and natural gas if California were not to adopt the suggested greenhouse gas reduction strategies. Furthermore, CARB will be able to more accurately predict the amount of greenhouse gas emission reductions that will be achieved through future and additional energy efficiency programs and standards if it is clear how much of the potential energy efficiency is already embedded within the forecast. This CARB modeling will help inform the development of the AB 32 scoping plan, which CARB is required to adopt by the end of 2008, and a draft of which is planned for June.

Furthermore, the CPUC and CEC will also be able to use the revised demand forecast information for a more accurate modeling of potential greenhouse gas regulations and emission reduction strategies for the electric and natural gas sectors. Similarly to CARB, if the amount of embedded energy efficiency is clearly delineated, the CPUC and CEC can more accurately determine how much future energy efficiency is required as part of the package of greenhouse gas reduction strategies needed to meet AB 32. The CPUC/CEC modeling process will help inform their recommendations to CARB

to inform the scoping plan, and E3 is currently planning on holding a workshop to discuss their model before the CARB scoping workshop on April 17.

The IOUs and CPUC will also benefit from the clarified demand forecast in their long-term procurement planning (LTPP) process, though the timing for this purpose is less urgent than the previous two forums. The CPUC's Order Instituting Rulemaking for its new LTPP proceeding, R.08-02-007 indicates that the next full LTPP process will be the 2010 LTPP cycle, which is anticipated to begin in early 2009. With a clearly delineated demand forecast, the IOUs can develop more accurate procurement plans.

As noted above, the CEC and POU's also use the demand forecast for the AB 2021 energy efficiency goal setting process. With a clarified demand forecast, the CEC and POU's and other entities will be able to determine the impact that their energy efficiency goals will have on demand growth and therefore plan for supply accordingly. AB 2021 requires the next update of the CEC statewide and POU ten-year energy savings targets in 2010.

NRDC recommends that the CEC work collaboratively with CARB and CPUC on the appropriate timeline to provide the updated demand forecast. The CARB draft scoping plan is due for internal review this summer with the final plan due by the end of the year. In addition, the CPUC and CEC are scheduled to provide recommendations to CARB on the natural gas and electricity policies by August of this year. While these agencies will be best able to determine the deadline for updated results, NRDC recommends that the updated forecast be available for use with sufficient time to incorporate into their analyses, perhaps by the end of April. Although completing a revised analysis within the next few months would be most ideal, we understand that this process may take longer if the CEC determines the need for more comprehensive changes to the demand forecast model.

### **III. Conclusion**

NRDC appreciates the opportunity to comment on the questions posed for the upcoming IEPR Committee Workshop on *Energy Efficiency and Forecasting*. NRDC looks forward to participating in the March 11, 2008 workshop and potentially supplementing our comments after the workshop.