



AB 802 Update: CPUC Energy Efficiency Baseline Policy Proposal

WHPA – Summary of Energy Efficiency Legislation

Background

On April 21, 2016, Administrative Law Judge (ALJ) Julie Fitch issued a ruling in the Rolling Portfolio “seeking comment on energy efficiency baseline policy and related issues.” The ruling included an Energy Division staff proposal (white paper) on the application of existing conditions baseline and normalized metered energy consumption as required by AB 802 (Williams) and a technical analysis developed by Navigant Consulting.

The white paper was revised and re-released by ALJ Fitch on April 28, 2016. This revision also resulted in a modification of deadlines for comments in response to questions posed in the April 21, 2016, and the revised white paper on April 28, 2016. **Comments are now due by Tuesday, May 17, 2016 and reply comments by Tuesday, May 24, 2016.**

A full copy of the April 21, 2016, with the original white paper, which is now replaced by the April 28, 2016 revision, and related appendices are here:

<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M159/K980/159980778.PDF>

The revised white paper released April 28, 2016 is here:

<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M161/K471/161471852.PDF>

The Navigant technical analysis on potential savings is here:

<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M159/K986/159986262.PDF>

Policy Framework

In October of 2015, Assembly Bill 802 and Senate Bill 350 became California law. SB 350 and AB 802 seek to reduce carbon emissions by doubling energy efficiency savings goals. AB 802 requires the CPUC to authorize new programs that “measure overall energy usage reductions” for “modifications to existing buildings to bring them into conformity with, or exceed, the requirements of Title 24,” as well as for behavioral, retrocommissioning, and operational measures.¹ As part of AB 802, the CPUC is required to develop recommendations for setting the “appropriate baselines for specific energy efficiency programs and/or measures.” The law requires the use of existing conditions baselines and the provision of incentives based on metered energy savings “to count all energy savings achieved through the authorized programs.”² However, AB 802 also gave the CPUC authority to provide exceptions to the use of existing conditions baselines where appropriate. The CPUC, in its “Staff White Paper on Energy Efficiency Baselines,” provides recommendations for when different types of baselines should be applied when estimating savings in utility energy efficiency programs.

Challenges and Implications in Establishing Baseline

What is a Baseline?

In Decision 14-10-046, the CPUC provided a basic explanation of what a baseline is. A baseline estimates a hypothetical level of energy consumption prior to the efficiency measure being implemented as a point of comparison for determining savings. “*Figuring out what you saved requires figuring out what you would have consumed without the efficiency measure.*”³

Traditionally, incentives for energy efficiency projects have been measured based on how much energy savings occur above energy code (code baseline) rather than how much energy savings

¹ CPUC 2016. “Staff White Paper on Energy Efficiency Baselines: For Implementation of Assembly Bill 802,” p. 5.

² *ibid.* p. 17.

³ *ibid.* p. 4.

occur compared with the existing conditions (existing conditions baseline), which are often below code.⁴

Why do Baselines Matter in Energy Efficiency Policy?

The choice of baseline method has significant ramifications to all aspects of energy efficiency savings calculations, “including the existence or amount of savings, customer eligibility for incentives, the amount of incentives, whether a Program Administrator meets its Commission-established savings goals, and the award of shareholder incentives.”⁵ In general, the lower the baseline – the easier it is to claim more savings and achieve cost-effectiveness goals.

Why Shift to an Existing Conditions Baseline?

High levels of non-compliance with energy codes and standards have led to an overestimation of energy savings from codes and standards activities. Deferred retrofits and avoiding permits or code triggers have caused much of the over-estimated savings—however these activities are difficult to quantify. The goal of an existing conditions baseline is to capture the savings that is not materializing in the market because there is no incentive for the customer to bring their equipment up to code. Put another way, the goal of an existing conditions baseline is to measure savings based on what the electricity grid sees and not on an assumption that existing equipment meets today’s codes and standards.

Challenges

The challenge for the CPUC is that shifting to an existing conditions baseline could lead to double counting of savings or claiming significant amounts of savings that would have occurred absent the program intervention. Double-counting would occur if savings that have already been accounted for as part of codes and standards programs—and have already been built into the demand forecast—are also claimed after shifting to an existing conditions baseline. “Without careful implementation, AB802 could result in a portfolio of projects delivering meter-verified energy savings made up largely of upgrades that were already occurring in the economy.”⁶

The CPUC developed a white paper to define when savings should be estimated using existing conditions and when the existing conditions would not be an appropriate baseline. The white paper is briefly summarized below in the following sections:

- Key CPUC Recommendations
- CPUC’s Baseline Analysis Process
- Proposed Framework for Baselines

Key CPUC Recommendations

Key staff recommendations in the white paper include⁷:

- For some programs, the appropriate baseline (i.e., existing conditions or code) can be applied broadly, while for other programs the baseline depends on the measure or other specific conditions.
- To reduce the amount of complexity and controversy over claiming savings, CPUC policy and program administrator portfolio design efforts should focus on transitioning significant portions of the energy efficiency program portfolios to the programs directed in AB 802.

⁴ *ibid.* p. 3-4.

⁵ *ibid.* p. 4.

⁶ *ibid.* p. 7.

⁷ CPUC 2016, p. 3.

- Now that some legally-required activities are eligible for utility energy efficiency savings credit, savings goals should be set as net of free-ridership to reduce the potential for utility staff or contractors to engage in wasteful or fraudulent conduct.

CPUC's Baseline Analysis Process

To develop a framework for implementing an existing conditions baseline, AB 802 directed the CPUC to conduct a technical analysis to assess the stranded potential of savings up to code and to consider the potential for double counting of savings.⁸ To determine when an existing conditions baseline is appropriate, the CPUC also considered the results of an interagency baseline assessment, results from the IOU baseline pilot studies, codes and standards evaluation studies, and information on CEC's energy forecast and planning.⁹ Specific information regarding the results from the aforementioned studies can be found beginning on Page 8 of the "Staff White Paper on Energy Efficiency Baselines."¹⁰

Proposed Framework for Baselines

The CPUC developed a framework, which proposes the conditions under which use of an existing conditions baseline is most likely to represent savings that are caused by utility programs. The general approach taken in this framework is that "an existing conditions baseline is most likely to represent savings that are caused by utility programs when the programs induce a customer to make a building alteration or purchase equipment that saves energy. However, if equipment has failed and cannot be repaired – leaving the customer with no other option but to replace the equipment with a current product available in the market – or when a customer has already planned a major alteration for which a permit is typically attained, then incremental energy efficiency is only achieved if the utility program has induced the customer to purchase higher efficiency equipment than the minimum efficiency level required by code, and a code baseline should be used to calculate these savings."¹¹

The proposal divides programs and measures into existing baseline and code baseline recommendations, as shown in Figure 1. For some programs, which baseline is used will be determined by the type of measure as highlighted in gray below.¹²

⁸ The full technical analysis, developed by Navigant, can be found online at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M159/K986/159986262.PDF>.

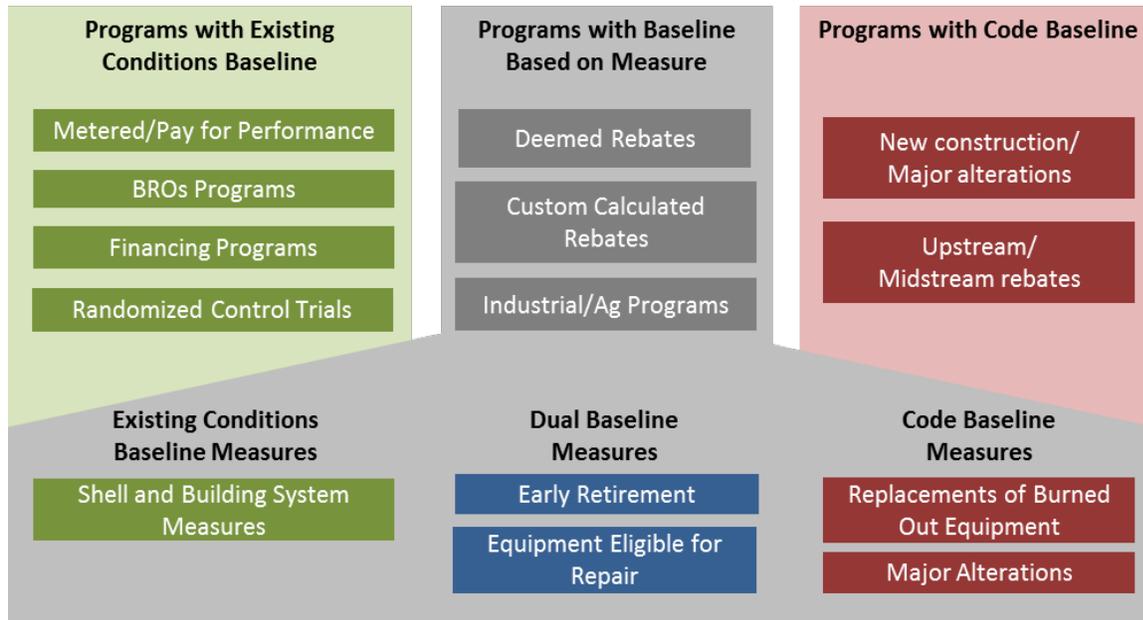
⁹ For more information on the methods and process used by the CPUC to develop the baseline framework, see pp. 8-17 of the revised white paper. Available online at: <http://eecoordinator.info/correction-released-in-cpuc-staff-white-paper-on-energy-efficiency-baselines-comments-deadline-extended/>

¹⁰ CPUC 2016, p. 8-17.

¹¹ CPUC 2016, p. 17-18.

¹² The CPUC intends this framework and its recommendations to evolve with additional research and notes throughout that "regardless of what initial policies are adopted by the CPUC, as the policy is implemented and more information is obtained on the types of projects and measures that program administrators target, the policy should evolve."

Figure 1. CPUC Summary of Baseline Framework¹³



Existing Conditions Recommendations¹⁴

The types of programs for which an existing conditions baseline would be used include:

- Pre-post audits and retrofits using normalized metered energy consumption,
- Behavioral, retrocommissioning, and operational programs,
- Programs that use experimental design or randomized control trials, and
- Financing programs.

The types of measures for which an existing conditions baseline would be used include:

- Shell and building system measures, and
- Repair-eligible equipment.

Code or Standard Baseline Recommendations

The types of programs for which code or standard practice baseline is appropriate

- Upstream or midstream rebate programs, and
- New construction and major alterations /renovations.

The types of measures for which code or standard practice baseline is appropriate include:

- Single measure rebates for equipment replacements with measurable EUL,
- Replace on burnout (ROB) and normal replacement,
- New construction, and
- Early retirement.

Case-by-Case Basis Baseline Recommendations

The types of programs for which baseline should be determined on a case-by-case basis include:

- Deemed rebate programs,

¹³ CPUC 2016, p. 19.

¹⁴ For additional detail on why programs or measures were recommended as code baseline or existing conditions baseline, see the detailed discussion on pp. 20-30 of the staff white paper.

- Commercial custom projects with calculated savings estimates,
- Industrial programs, and
- Agricultural programs.

The types of measures for which baseline should be determined on a case-by-case basis include:

- HVAC equipment replacement, and
- Light fixtures and ballasts.

HVAC-Specific Implications

Appropriate Baseline Depends on Program Design

CPUC's main discussion on HVAC equipment recommends that HVAC equipment baseline decisions should depend on the program design. According to the white paper, HVAC equipment presents a unique challenge due to the high EE potential they represent, the range of upgrade conditions and potential associated measures, and the fact that equipment may be part of different types of programs or may stand alone as deemed measures.¹⁵ Staff recommended that for basic HVAC replacement on burnout without a comprehensive retrofit, a code baseline is appropriate. The CPUC recommends an existing conditions baseline for a comprehensive retrofit program situation. Programs where existing baseline include a comprehensive retrofit may include:

- "Repair eligible equipment replacements, in which functioning or broken HVAC equipment can be replaced, or
- Metered approaches that measure the actual consumption reduction, with either experimental design or pay for performance, or
- HVAC replacements performed through a financing program with no utility rebate, in conjunction with our recommendation that the CPUC establish separate savings goals for financing programs."¹⁶

Existing Baseline

CPUC recommended HVAC measures for which existing baseline is appropriate included "repair eligible equipment" and "building system measures". Repair eligible equipment includes measures that are repairable well beyond expected useful lives such as split/package AC, heat pumps, or furnaces. If equipment can be repaired well beyond its useful life, that represents a barrier to replacing with high-efficiency equipment. Building system measures where existing baseline is appropriate include duct sealing or repair, ventilation, HVAC controls, EMS, and HVAC Quality Maintenance.¹⁷

Code or Standard Baseline

CPUC recommended HVAC measures for which code baseline is appropriate included single measure rebates for equipment replacements with a measurable expected useful life (EUL). Only furnaces or heating equipment applied for HVAC. For these conditions, the program only causes the additional savings above and beyond what was required by code.¹⁸

¹⁵ For a detailed discussion on HVAC equipment and baselines, see pages 26-30 in the white paper.

¹⁶ CPUC 2016, p. 29-30.

¹⁷ *ibid.* 26-27.

¹⁸ *ibid.* 27-28.

Recommendations for Counting Savings

To more effectively account for savings under the new energy efficiency program framework, the CPUC suggested three changes, summarized below.¹⁹

Set goals as net of free ridership (after factoring in spillover)

The CPUC recommends setting IOU goals as net (accounting for free ridership and spillover) rather than the current practice of setting goals as gross savings. Customers may still receive credit for gross savings but implementer's goals would be calculated net of freeriders.

Use alternate methods to account for attribution where possible

To properly account for attribution of savings, the CPUC recommends program implementers "consider embedding tracking and measurement into program design and not wait for evaluation professionals and regulatory bodies to determine net to gross impacts."²⁰

Recommendations for Estimation of Lifecycle Impacts

The baseline framework described above focuses on the energy savings credit that utilities claim, which are first year savings. The total lifecycle impacts of the baseline policy change are also important since lifecycle impacts determine calculated GHG reductions, future peak demand reductions, and cost effectiveness calculations. The CPUC staff provided recommendations for how lifecycle impacts could be estimated for the categories of baselines identified in the framework above.²¹

Proposed Guidance for Portfolio Development

Since AB 802 and SB 350 direct the CPUC to provide incentives to bring existing buildings to code and that considering normalized metered energy consumption should be the primary approach for energy efficiency in the future, the program administrators will need to plan for this transition. The metering approaches are not effective for all measures or programs, but they provide benefits to some activities over deemed methods. Therefore the CPUC recommends they should be used where possible.²²

Need for New Data Collection Efforts

With the move to an existing conditions baseline, programs will require new data collection efforts to understand the overall savings implications of new programs. The CPUC recommends that PAs collect data about equipment being replaced through programs and "studies of the population of existing buildings are needed to understand the aggregate potential for existing conditions programs."²³

Conclusion

The CPUC envisions this framework as a work in progress and is inviting comments on the proposal through May 17th.

¹⁹ For a detailed discussion of the net vs gross discussion and recommendations for estimated lifecycle impacts for specific programs or measures, see pages 30-36 of the white paper.

²⁰ CPUC 2016, p. 34.

²¹ For detailed recommendations on how to deal with lifecycle impacts for specific program types or measures, see pp 34-36.

²² CPUC 2016, p. 36.

²³ *ibid.* 37.