Draft

Energy Division Process for Review of Investor Owned Utility Custom Measure Ex Ante Values

Introduction:

This document details how the California Public Utilities Commission (Commission) will review the energy savings claims of Investor-Owned Utilities (IOUs) implementing custom measures or projects in the 2010-2012 Energy Efficiency program cycle.

Custom measures and projects are energy efficiency efforts where the customer financial incentive and the ex ante energy savings are determined using a site-specific analysis of the customer's existing and proposed equipment, and an agreement is made with the customer to pay the financial incentive upon the completion and verification of the installation. The efforts are by definition unique, each with their own characteristics. Parameters that determine estimated energy savings from a custom measure or project are more variable and less predictable without a site-specific analysis than the more common deemed measures for which savings parameters can be predetermined. As such, it is necessary to establish a clear process by which energy savings estimates from custom measures and projects can be reviewed in real-time as such measures and projects are identified and implemented.

An effective custom measure and project review process balances the needs of program participants who are investors and beneficiaries, the IOUs who administer the programs, and ratepayers who provide incentive funding contingent on adequate oversight of their investment. The process identified here aims to strike that balance. This review process is intended to be applied consistently throughout the program cycle; however, clarification may be made at the discretion of the Assigned Commissioner or Administrative Law Judge.

Attachment A includes a graphical schematic depicting the process outlined in this document. In addition, the principles guiding this process and supporting resources are defined herein.

Guiding Principles:

1. Energy savings are the paramount priority of custom measures and projects.

2. The Customer Measure and Project Review Process is intended to allow Energy Division (ED) to review customer projects in parallel with the IOUs, thereby allowing for maximum customer convenience and program oversight.

3. When possible and practical custom measure and project calculation methodologies shall be based upon Database Energy Efficiency Resources (DEER) methodologies as frozen for 2008 DEER version 2008.2.05 or upon methodologies documented within the most current Energy Division reviewed and approved IOU non-DEER deemed workpapers.

4. IOUs are responsible for effective record keeping such that calculation tools, documentation of how those tools were applied to custom measures and projects, and documentation of custom project ex ante savings calculations are submitted electronically to the Energy Division.

Supporting Resources:

IOUs are directed to maintain the following supporting resources to enable timely, effective review of custom measures and projects by the Energy Division and their consultants.

Calculation Tool[1] Archive (CTA):
Each IOU shall maintain an archive of all tools used in calculating ex ante values such that they remain accessible to the Energy Division throughout the program cycle.[2] The archive shall contain all versions of all tools used in the development of ex ante values for custom measures or projects claimed during the current program cycle.

The tool archive shall include:

a. All manuals and user instructions, where applicable. If the calculation tool is simply a spreadsheet, then all cell formulas and documentation shall be readily accessible from the tool.
b. A list of technologies, measures or projects for which custom calculations are performed using the tool.

[1] Tools, in the context of this document, means software, spreadsheets, "hand" calculation methods with procedure manuals, or any automated methods used for estimating ex ante values for custom measures or projects.

[2] The Utilities must arrange access to any proprietary tools and software used in the development of ex ante values so that Energy Division can perform the review described in this document.

The Calculation Tool Archive shall be updated by the IOUs on an ongoing basis during the 2010-2012 program cycle as tools are revised.

Custom Measure and Project Archive (CMPA):
Each IOU shall keep a complete up-to-date electronic archive of all custom measures and projects. Each project should be added to the Archive within five days of the date of the customer's application to the IOU. Each project should be assigned a unique identifier that shall not be re-used or re-assigned to other projects.

To ease Energy Division use of the CMPA, the IOUs shall provide a summary list of all projects in the CMPA. Energy Division will provide the utilities with the format of the summary list. The summary list shall identify each project using its unique identifier and provide a link to the detailed files of each project. The summary list shall also reflect the date of the most recent entry into each project. The summary list shall include the most current estimate of each project's projected ex ante energy savings values. The summary list shall include the target date when a customer agreement is expected to be issued for customer signature (Agreement Target Date). The summary list shall be updated on the first and third Monday of every month for the duration of the 2010-2012 program cycle.

Each custom project's detailed file shall include, at a minimum, the items below.

- Project or measure classification information[3]
- Site and customer information (location, contacts, unique customer ID, project and unique site identifiers)
- Preliminary, approved and claimed (as available) savings estimates
- Site inspection dates and status
- IOU and IOU and/or third party implementation contractor contact information
- Log of changes and new entries into the detailed project file
- Documentation supporting ex ante savings calculations

Although the specific types of documents and parameters required to be in the supporting documentation will vary based on the type of project, *examples* of the expected data elements are listed below. Not all these items are applicable to all project types.

[3] An ED established measure naming and classification system is to be used

- Documentation to support Baseline assignment (Code or Standard requirement, Early Retirement, Retrofit, Replace On Burnout, industry standard practice, CPUC policy, etc)[4]
- Existing system controls and operating status description
- Existing system output capacities – current output and maximum/design capacity
- Pre-installation inspection report
- Post-installation inspection report
- Proposed modifications with schematic as applicable
- Preliminary savings calculations and supporting data with documentation to ensure replicability
- Manufacturer's cut sheets when used to estimate ex ante savings or when needed to ensure replicability
- Fuel switching considerations and any required analysis per CPUC policy regarding fuel switching projects (see Energy Efficiency Policy Manual)
- Other fuel savings and/or load increases resulting from the project
- Heating, Ventilation, and Air Conditioning (HVAC) interactive effects values and methods used to develop those values, when measures cause a change in HVAC system loads
- Interactions between multiple measures that act to increase or decrease savings relative to a measure stand-alone savings estimate
- Pre/post production output data when used in savings calculations and the source of such records
- Billing history - one-year pre installation, with interval data required when available; when ex ante estimated values rely upon a per-unit-production changes based on multi-year production data, corresponding billing histories are required
- IOU or implementer program manual (a single archive of these documents should be referenced rather than including the documents in each project archive)
- M&V plans, reports and raw data archives, where applicable
- EUL/RUL value, analysis or source

The Custom Measure and Project Archive and Utility Custom Project Summary List will be housed on an internet-accessible website that meets

[4] The baseline parameters used are of primary importance in estimating project savings. Appendix I of this document provides the guidelines by which Energy Division will review baseline parameter selection.

reasonable security and legal requirements. The Energy Division will be responsible to establishing and maintaining that website.

Custom Measure and Project Review Process:

There are three categories of Energy Division's Custom Measure and Project Review Process: general, triggered, and claims. All reviews are at the Energy Division's discretion; however, if an IOUs ex ante values are not reviewed by the Energy Division, the IOU shall rely on those values in making energy savings claims before the Commission after adjusting those values using the gross realization rates as shown in Table 1 below.

Table 1: Default Custom Measure Gross Realization Rates

IOU	kWh	kW	Therm
PG&E	0.6	0.6	0.7
SCE	0.75	0.75	
SDG&E	0.7	0.7	0.7
SCG			0.7

The **General Review** will include Energy Division's oversight of the CTA and CMPA. Energy Division, at its discretion, will review tools, measures, and projects, as well as inputs to the tools for selected projects. Energy Division may choose to provide the IOUs with input on one or more of the tools, measures, or projects. These reviews are done on a prospective basis. IOUs shall adjust their subsequent use of tools to conform to Energy Division input.

The more specific **Triggered Review** includes a close examination of a subset of custom projects. That subset includes any site with projected aggregated[5] ex ante savings from custom measures and projects of 250,000 kWh, 200 kW,[6] or 10,000 therms. A project that is divided into multiple measures and submitted as multiple applications may include a

[5] All applications for a single customer site during the 2010-2012 cycle participating in any program shall be aggregated for comparison with the trigger values. Once any trigger level is hit all current and subsequent applications for that customer site shall be subject to a Triggered Review.

[6] Per DEER definition

combination of deemed and custom measures. All applications for a single customer site during the 2010-2012 cycle participating in any program shall be aggregated for comparison with the trigger values and once any trigger level is hit all current and subsequent applications for that customer site shall be subject to the Triggered Review.

IOUs shall include in the CMPA summary list, provided to Energy Division as described above, an indication for each project if that project's estimated energy savings is expected to exceed the trigger levels. This "Trigger Notification" for a project shall be provided to Energy Division, via the next bi-monthly CMPA summary list submission, when a customer's application is entered into the IOUs' archive even if an ex ante savings estimate is not yet available. The Energy Division shall notify the IOU by the date of the following CMPA summary list submission if a review of the IOU's ex ante determinations for that project is planned. The Agreement Target Date for triggered projects is expected to be no sooner than sixty to ninety days after the initial Trigger Notification is provided to Energy Division by the IOU. Additional deadlines by which the IOUs and the Energy Division must notify one another of review steps are detailed below.

For all custom applications with ex ante values that meet the trigger notification requirement and are not reviewed by the Energy Division, the IOU shall apply an adjustment to the gross savings estimate values using the Default Custom Measure Gross Realization Rates (Table 1) above when making energy savings claims before the Commission.

The Triggered Review process will include two stages: pre-installation review, and post-installation review.

Pre-Installation Review

The objective of the Pre-Installation Review is for Energy Division to perform a parallel review, with the IOUs, and then for Energy Division to provide to the IOUs input on the estimated custom measure or project ex ante savings. The Pre-Installation Review allows Energy Division to supplement the resources and information available through the CTA and CMPA in making its recommendations.

The IOUs shall provide the Energy Division the opportunity to participate in any site visits, pre-installation inspections, customer interviews, pre-installation M&V, or spot measurements that may occur during this and subsequent phases. If such events are scheduled by IOUs more than five days in advance, the IOU shall provide notification to the Energy Division

within one business day of scheduling the event; the Energy Division should be immediately notified for events scheduled less than five days away. The Energy Division will notify the IOUs prior to the event if they plan to send a representative.

During the Pre-Installation Review, the Energy Division will coordinate any Measurement & Verification (M&V) activities on these custom projects with the IOU. The Energy Division may choose to use the Utilities' or its own contractors, at Energy Division expense, to perform site inspections or pre-installation M&V.

The Energy Division will provide the IOUs with the results of its Pre-Installation Review, including recommended ex ante values and documentation to support its recommendation, ten days before the Agreement Target Date identified by the IOU in the CMPA summary list. However, without prior consent from Energy Division, the IOU shall provide Energy Division with no less than a sixty day review period from initial trigger notification. If the Energy Division affirms the IOU's estimated ex ante values or suggests values which would result in greater or lower savings than the IOU's estimated ex ante values, then the IOU shall rely on those values when entering into estimated incentive agreements for the project and shall also rely on those values for subsequent energy savings claims before the Commission if no further post-installation adjustments are identified by either the IOUs or Energy Division, as described below.

Post-Installation Review

The objective of the Post-Installation Review, stage 2 of the Trigger Review process, is to provide the Energy Division with continued opportunity to review and provide input on the accuracy of ex ante values assumed by the IOU prior to the utility making its final incentive payment to its customer. The IOU shall allow the Energy Division access to site visits, post-installation inspections, customer interviews, post-installation M&V, or spot measurements. IOU and Energy Division notifications for these events should follow the guidelines described above for Pre-Installation Review. The IOUs shall continue maintenance of the CTA and CMPA in accordance with the direction provided above. If the post-installation M&V inspection results in an IOU adjustment of savings for projects that were reviewed by Energy Division during the pre-installation stage, Energy Division shall have the option to review and approve such adjustments. If, as a result of the post-installation inspection, the Energy Division affirms the IOU's estimated ex ante values or suggests values which would result in greater or lower savings than the IOU's estimated ex ante values, than the IOU shall rely on those values for making energy savings claims before

the Commission. Otherwise, no deliverables are due to either IOU or Energy Division.

IOU Claim Review

The IOU Claim Review allows the Energy Division to conduct a review of energy savings for custom projects included into the IOU Quarterly Claim[7] to ensure that:

1. appropriate default realization rates were applied to ex ante gross savings estimates for projects either not subject to the triggers defined above or subject to the trigger which were not reviewed by Energy Division;
2. recommendations made by Energy Division at the trigger reviews were accurately reflected in the claim.

The IOU Claim Review shall commence upon the IOU submittal of a quarterly reporting period claim containing those projects, and end at the later of ninety-days after that submission or the subsequent IOU quarterly submission. Energy Division shall notify the IOU of any errors found in their claim review and the IOU shall comply and revise the claims.

Custom projects which were not reviewed by the Energy Division prior to appearing in a Quarterly claim may be further reviewed for the purpose of gaining new information and prospective improvements to ex ante estimates and planning, but IOU's will not be held accountable for energy savings adjustments for such reviews for any projects covered by then existing customer agreements or already approved customer applications.

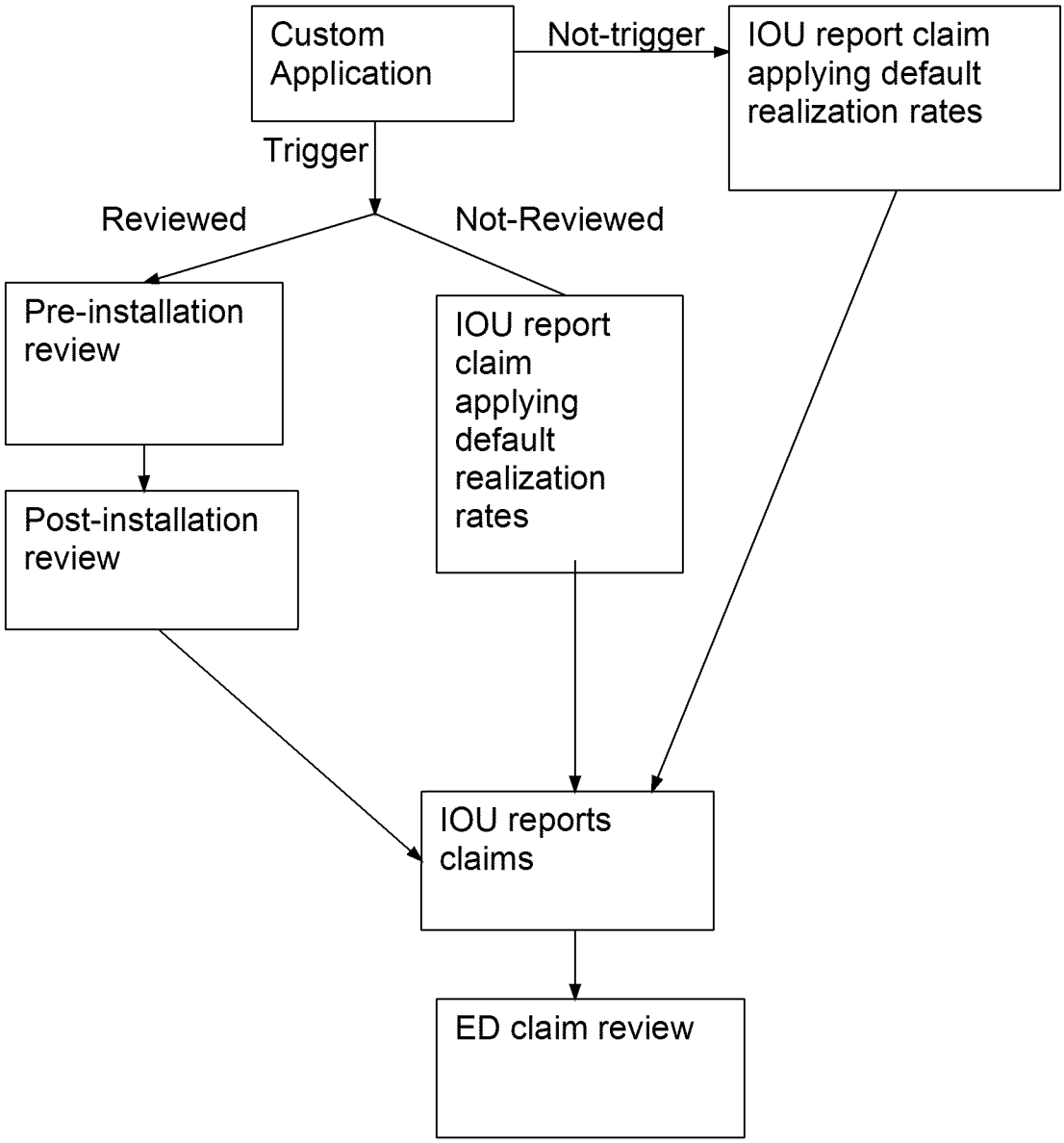
To facilitate future communication:

Energy Division and the IOUs shall establish a working group to allow an ongoing dialog on the custom measure and project review process. This working group will provide a forum for all parties to exchange information on their current activities and future plan and to discuss and resolve problems and issues with the process outlined in this document. The working group will also provide a forum for Energy Division to inform the IOUs on issues arising in its custom measure ex ante estimation review process. These issues may include items such as baseline definitions, net versus gross savings definitions and other items as any party deems necessary.

[7] As a component their energy efficiency portfolio reporting requirements each IOU will submit a quarterly filing on EEGA which includes details of all measure ex ante savings values for all individual projects and measures which have been installed prior to that claim.

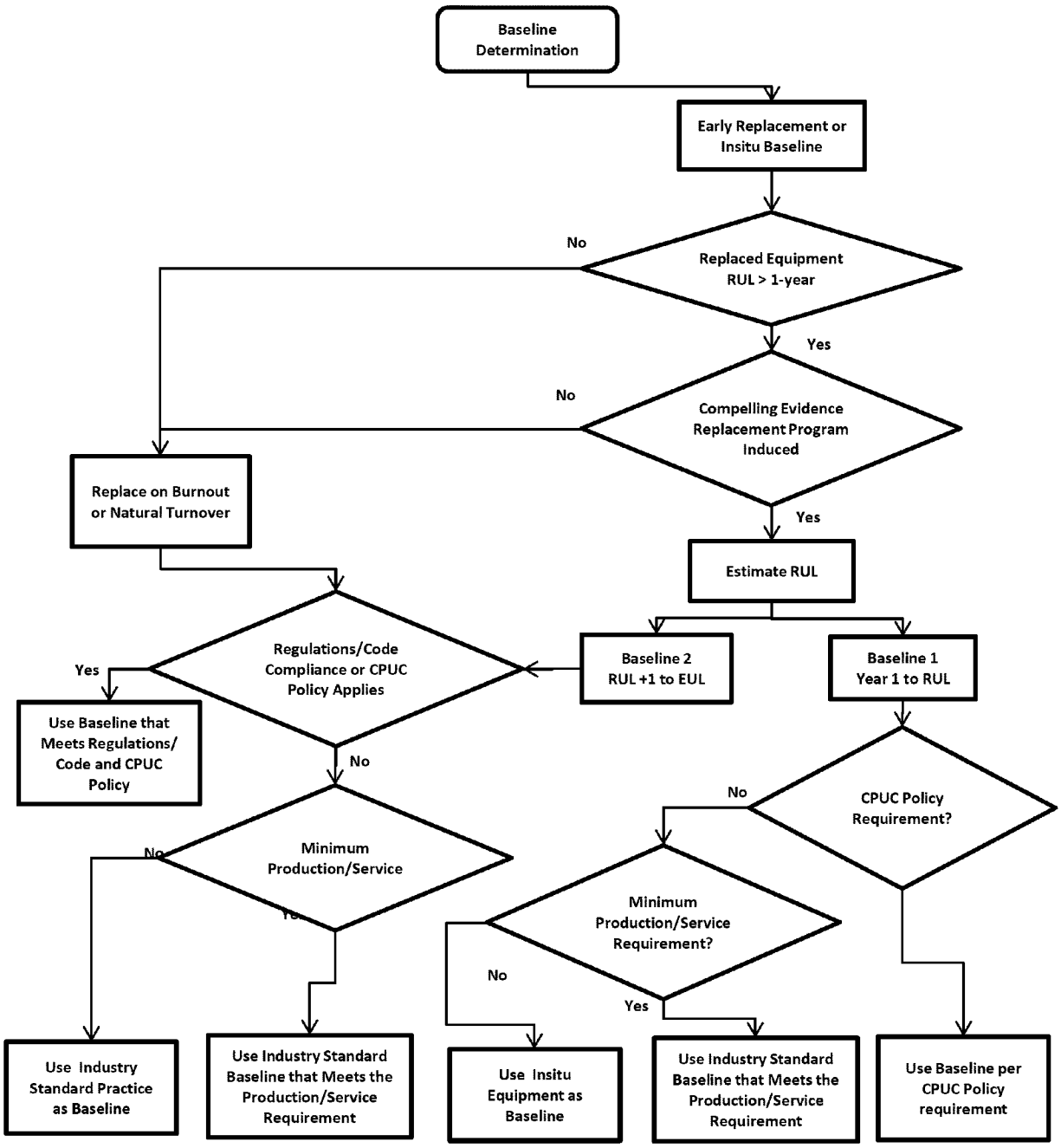
At any time during their development of ex ante estimates for a specific custom measure or project the Utilities may submit to Energy Division a request for an early Energy Division review or opinion on a specific issue. This process has been established by Energy Division issuance of the "Custom Measure Early Opinion Process" document posted as "Custom Measure Early ED Opinion Process v2.docx" on basecamp 9/30/2010 in the "Early Opinion Shared" project area. Energy Division shall respond to that request in as expeditious a manner as possible to provide the IOUs with guidance and to allow the Utilities to complete their ex ante estimates in a timely manner. However, this type of early guidance shall not limit or constrain any later Energy Division review of ex ante claims submitted by the Utilities.

Attachment A



Appendix I

Energy Division Methodology for Determination of Baseline for Gross Savings Estimate



Review of Baseline for Gross Savings Estimates

The estimation of ex ante saving values requires the selection of a baseline performance for every project. The baseline selection and specific baseline parameters are of primary importance to establishing the ex ante

savings estimates. The baseline parameters are selected by establishing the project category from the possible alternatives including New Construction or Major Renovations, program induced Early Retirement, Standard Retrofit or Normal/Natural Replacement/Turnover, and Replace On Burnout. These alternative categories result in the utilization of alternative baseline parameters set by Code or Standard requirements, industry standard practice, CPUC policy, or other considerations. In the review of IOU projects Energy Division will follow the guidelines as presented here in establishing the baseline for all gross savings estimates.

Notes to above flowchart

Pre-existing equipment[8] baselines are only used in cases where there is clear evidence the program has induced the replacement rather than merely caused an increase in efficiency in a replacement that would have occurred in the absence of the program.

Pre-existing equipment baselines are only used for the portion of the remaining useful life (RUL) of the pre-existing equipment that was eliminated due to the program. These early or accelerated retirement cases may require the use of a "dual baseline" analysis that utilizes the pre-existing equipment baseline during an initial RUL period and a code requirement/industry standard practice baseline for the balance of the EUL of the new equipment.

- A pre-existing equipment baseline is used as the gross baseline only when there is compelling evidence that the pre-existing equipment has a remaining useful life and that the program activity induced or accelerated the equipment replacement. This baseline can only apply for the RUL of the pre-existing equipment.
- A code requirements or industry standard practice baseline is used for replace-on-burnout, natural turnover and new construction (including major rehabilitation projects) situations. This baseline applies for the entire EUL as well as the RUL+1 through EUL period of program induced early retirement of pre-existing equipment cases (the second period of the dual baseline case.)

[8] Here the term equipment is intended to cover all technology cases including envelope components, HVAC components and process equipment and may also include configuration and controls options.

CPUC policy rules and IOU program eligibility rules govern the baseline

A careful review of utility and third-party program and CPUC policy rules must be undertaken and adjustments applied to gross savings in some cases. Adjustments are indicated for gross when there was clear evidence from program or policy rules that savings claims could not be made nor rebates paid for the baseline in question. Program rules come into play with respect to gross baseline requirements, for example, when those rules specify:

- a minimum required efficiency level;
- a minimum percentage improvement above applicable minimum code requirement;
- a minimum RUL of the existing equipment;
- the type or range of retrofits that are allowed be included in a program.

CPUC policy may apply to establishing gross baseline when Policy Manual Rules, a CPUC Decision or a decision maker Ruling includes special requirements or consideration for the situation or technologies of a measure. For example, projects or sites that involve fuel switching, co-generation or renewable technologies are usually subject to special baseline considerations (or other considerations) that must be considered in the savings estimates.

Minimum production level or service requirements govern the baseline

In some situations, a measure for which savings might be claimed could be determined to be the only acceptable equipment for an application. In such cases, the baseline must be set at the minimum needed to meet the requirements, which may be the same as the equipment planned for installation. An example would be an industrial process where only a variable-speed drive pumping system could meet the production requirements. For situations where the baseline conditions or requirements were changed (such as production level changes), the baseline equipment is defined as the minimum equipment needed to meet the revised conditions. If the pre-existing equipment is not capable of reliably meeting the new requirement (such as production change) for its remaining life, then a new equipment baseline must be established utilizing either minimum code requirement or industry standard practice equipment, whichever is applicable.

Industry standard practice baselines are established to reflect typical actions absent the program

Industry standard practice baselines establish typically adopted industry-specific efficiency levels that would be expected to be utilized absent the program. Standard practice determination must be supported by recent studies or market research that reflects current market activity. Typically market studies should be less than five years old; however this guideline is dependent on the rate of change in the market of interest relative to the equipment in question. For example, the lighting markets may change significantly in the next two years while larger process equipment markets might change more slowly. Regulatory changes might cause very rapid market practice shifts and must also be considered. For example, forthcoming changes in Federal Standards relating to linear fluorescent ballasts will result in rapid market shifts of equipment use.