D.11-07-030 ATTACHMENT B

Custom Project Review Process

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 *ex ante* 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 *ex ante* 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.

Chart A of this Attachment 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 generic 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

[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 current program cycle. Project specific tools and processes will be stored in the Custom Measure and Project Archive described below.

The tool archive shall include:

a. All manuals and user instructions, where applicable. If the calculation tool is simply a generic 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.

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 as soon as possible after either identified in the pre-application stage or the date of the customer's application to the IOU, whichever is earlier. Each project should be assigned a unique identifier that shall not be re-used or re-assigned to other projects.

The IOUs shall provide a summary list of all projects, in pre-application stage and application stage, in their 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 for each project the following (Energy Division and the IOUs will work out details of the meaning and specifics of each item below):

- The customer type
- The project type
- Industry Type
- Status (pre-application, application received, application in review, agreement signed, completed, paid, claimed, etc.)
- For pre-application stage projects, a best guess at probability the project will become an application (unknown, very low, low, medium, high, very high; or a percentage probability 0-100% for none to definite) with this status updated as new information becomes available)

- Project location (address)
- Utility contact person (Primary IOU review contact and, if appropriate, primary IOU customer interface contact such as marketing representative)
- Customer segment
- Equipment or process involved
- General description of the proposed project and its energy saving premise
- Estimated *ex ante* energy savings
- the target date when a customer agreement is expected to be issued for customer signature (Agreement Target Date)

The summary list shall be updated at least on the first and third Monday of every month for the duration of the 2010-2012 program cycle, however, the IOU shall provide the updated list more often as necessary to provide Energy Division with information on high priority or fast-tracked applications so as to allow Energy Division to perform reviews of such projects at its sole discretion. The IOUs may provide the summary list by program instead of a consolidated list, should they so desire.

For projects that, within a regular bi-monthly CMPA summary list submission, are projects for which applications have been newly received or projects that have moved from the pre-application state into the application state Energy Division will inform the IOUs of projects which have been selected for review. Such notification shall be before or by the next regularly scheduled CMPA summary list submission. Thus Energy Division will have a minimum of approximately two weeks to decide if a new application measure or project, either in pre-application or application stage will be subject to review and included into its review "sample." An IOU may request that a project review decision be expedited for high priority or fast tracked projects and Energy Division will make its best effort to accommodate such requests. If Energy Division chooses not to review a project an IOU may request such a project be included in the Energy Division review sample. Energy Division shall consider such decision change requests but will limit such changes based upon available resources to ensure adequate coverage of the full cycle portfolio of measures and projects in its review sample. An IOU request for Energy Division project review may be accepted, denied or deferred into the Early Opinion process at Energy Division's discretion, however, Energy Division shall inform the IOU of its decision as quickly as possible.

For each project sampled for a review, the specific types of documents to be maintained in the CMPA and parameters required to be in the supporting documentation may vary based on the type of project. *Examples* of the expected data elements are listed below.

- Documentation to support Baseline assignment (Code or Standard requirement, Early Retirement, Retrofit, Replace On Burnout, industry standard practice, CPUC policy, etc)[3]
- 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

[3] 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.

- 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

Projects Energy Division selects for review will have their complete documentation from the IOU CMPA placed into an Energy Division Review CMPA which, with the Utility Custom Project Summary List, will be housed on an internet-accessible website that meets 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 two categories of Energy Division's Custom Measure and Project Review Process: general 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	0.9	0.9	0.9
SCE	0.9	0.9	
SDG&E	0.9	0.9	0.9
SCG			0.9

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. The tools reviews will be done on a prospective basis. IOUs shall adjust their subsequent use of the tools to conform to Energy Division input.

The more specific **general project reviews** include a close examination of a selected subset of custom projects.

For all custom applications with *ex ante* values that 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.

Energy Division will conduct general project reviews at three stages of the IOU custom project process: concurrent and collaborative pre-installation review, post-installation review, and claim 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, at least ten days before the Agreement Target Date identified by the IOU in the CMPA summary list. However, the IOU shall provide Energy Division with all CMPA documents in a timely manner such that

Energy Division has a reasonable ability to meet this timeline. Energy Division and the IOUs agree to work together to allow timely review of expedited and high priority project. 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 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, then 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[4] to ensure that:

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[4] 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.

1. appropriate default realization rates were applied to *ex ante* gross savings estimates for projects that were not reviewed by the Energy Division;
2. recommendations made by Energy Division for reviewed projects 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 that 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.

Resolution of Disagreements:

1. Should Energy Division and a Utility have a technical disagreement on a project's *ex ante* values, Energy Division and the Utility shall meet to discuss and resolve the differences. If the Energy Division recommended *ex ante* value is less than a plus/minus 20 percent of the utility estimated *ex ante* value, Energy Division and the utility shall split the difference of the two values. However, this does not apply if the disagreement is where Energy Division determines that savings will not accrue at all or when a CPUC policy has not been followed. However, in cases where the difference is greater than a plus or minus 20 percent, then Energy Division's value will be the frozen *ex ante* value.

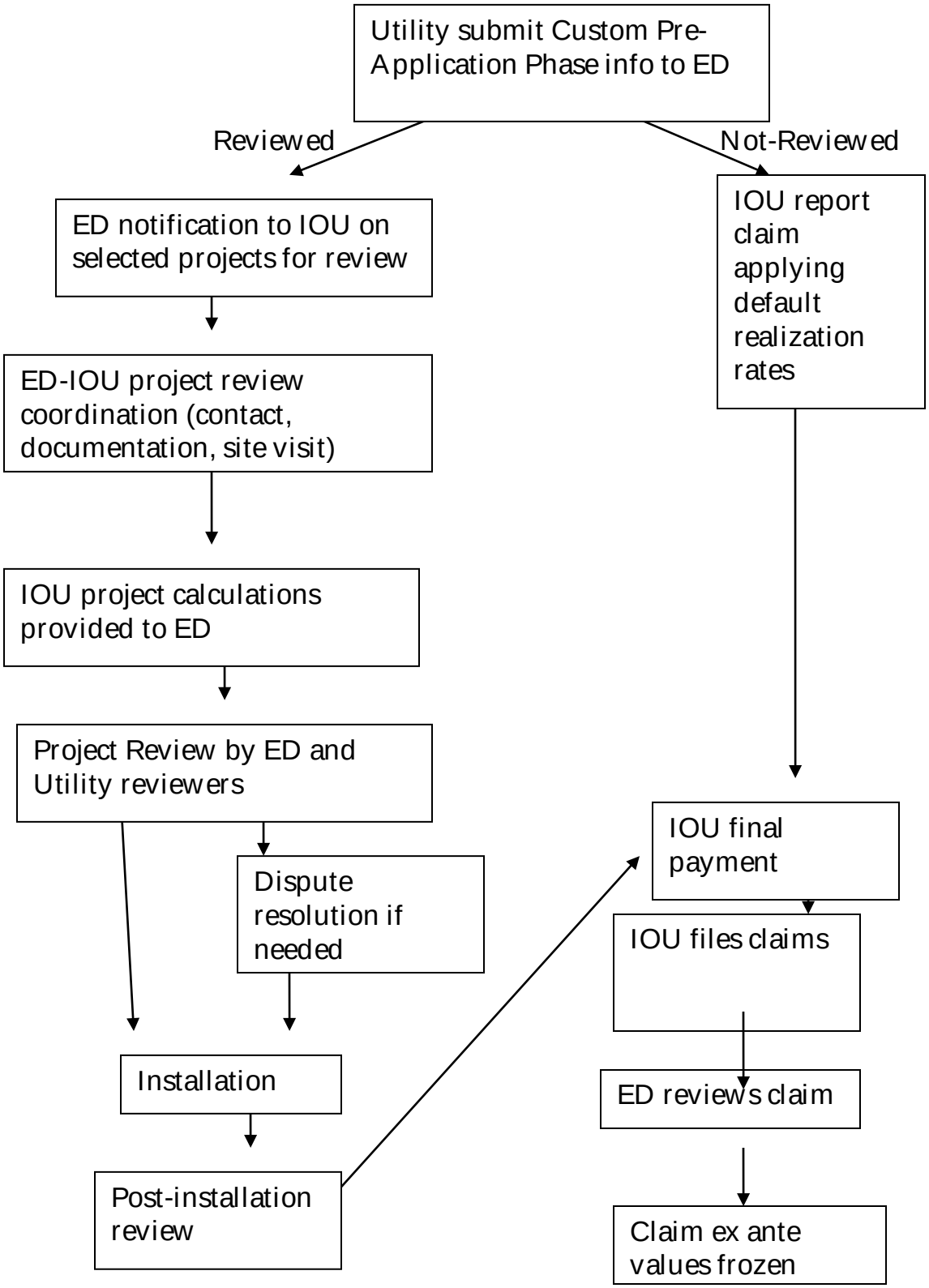
To facilitate future communication:

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

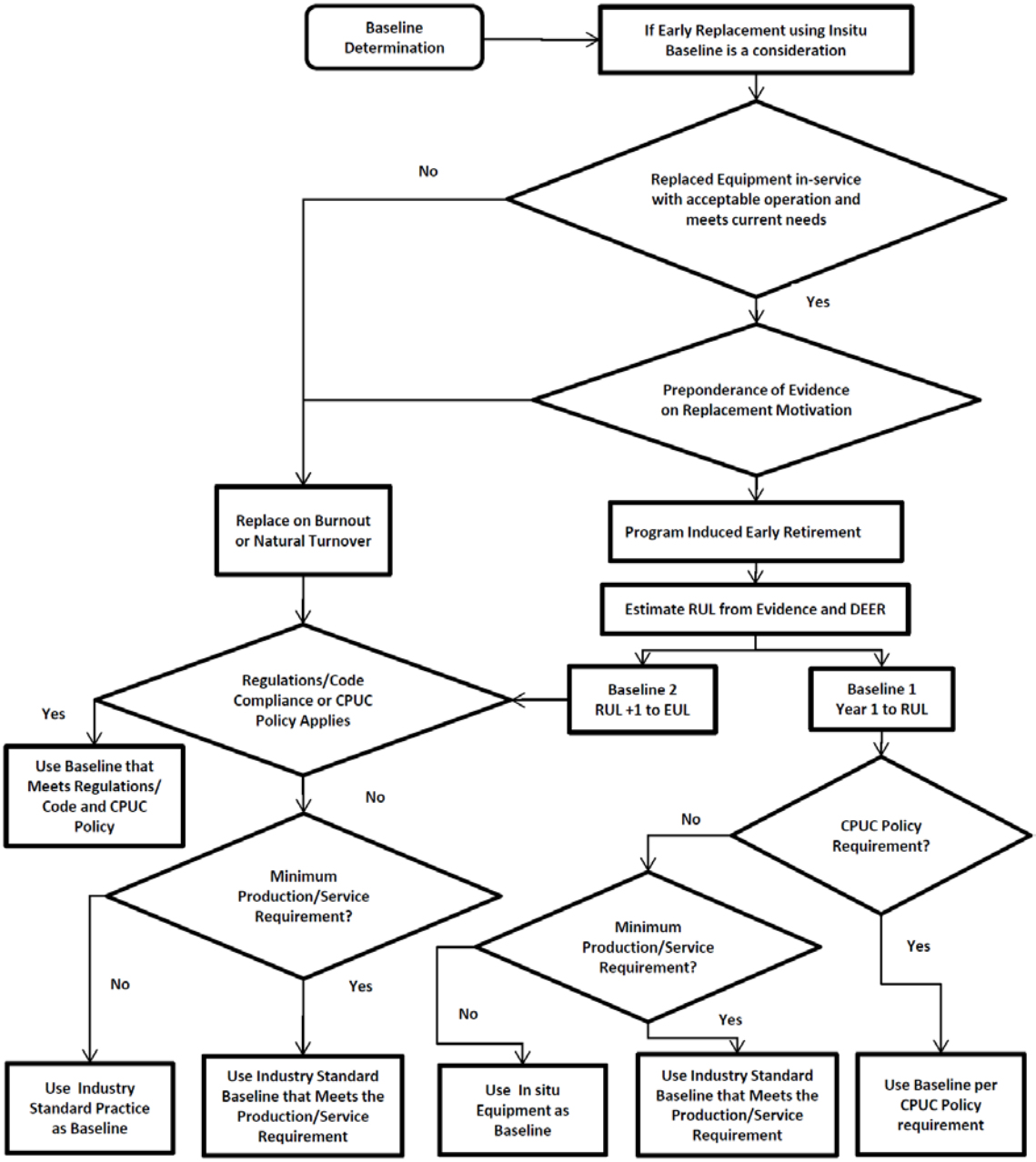
as baseline definitions, net versus gross savings definitions and other items as any party deems necessary. Energy Division will maintain a public archive database of summary of issues identified in its custom applications and projects reviews, and the Energy Division dispositions of those issues. Customer specific data and information will be removed from the Energy Division summary of issues and dispositions.

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 Energy Division 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.

Chart A


Utility submit Custom Pre-Application Phase info to ED
Reviewed
Not-Reviewed
ED notification to IOU on selected projects for review
IOU report claim applying default realization rates
ED-IOU project review coordination (contact, documentation, site visit)
IOU project calculations provided to ED
Project Review by ED and Utility reviewers
Dispute resolution if needed
IOU final payment
IOU files claims
Installation
ED reviews claim
Post-installation review
Claim ex ante values frozen

Energy Division Methodology for Determination of Baseline for Gross Savings Estimate[1]



[1] D.12-05-015 at 347 states "We direct Staff to update and distribute to the service list of this proceeding Appendix 1 of Attachment B to D.11-07-030, to incorporate clarifications provided here regarding baseline for gross savings estimates, and to indicate that a preponderance of evidence on the motivation for equipment replacement shall be utilized to determine which of the two baseline alternatives is applied for all gross savings estimates." Changed or added text from original is highlighted in red. Above diagram has been updated and replaces the original.

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 including New Load or Capacity Expansion, 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[2] baselines are only used in cases where the preponderance of evidence indicates 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. This preponderance is based on the more convincing evidence and its probable truth or accuracy, and not on the amount of evidence. Commission Staff should use its ex ante review process to establish guidelines on how to evaluate and weigh different types of evidence for the determination of the appropriate baseline alternative.[3]

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 preponderance of 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.)

CPUC policy rules and IOU program eligibility rules govern the baseline

[2] 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.
[3] D.12-05-015 at 347

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 lighting system and components will likely result in rapid market shifts of equipment use.