Guideline for the
Energy Division – Joint Investor-Owned Utilities Custom Application Review Process and Protocols

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Energy Division (ED) and Joint-Utilities (Utilities) have agreed to this Guideline for the custom applications ex ante value review and reporting process described here. This document addresses how Energy Division will fulfill its mandated role in reviewing ex ante values to be used for custom measure/project claims and how the utilities will report ex ante claims for custom measures/projects, absent any other governing document or decision. Additional objectives of the process documented here are for Energy Division to review the utilities ex ante custom project estimates early so as to provide real time feedback to the utilities and also to allow Energy Division to collect project pre-implementation data to improve the accuracy of program impact evaluations, without interrupting the program application process or project implementation activity. The Utilities support the concept that the ED and their reviewers would have access to the same documents and analysis that the Utilities and their reviewers have when reviewing a project without impeding the ability of the Utilities to continue reviewing and approving projects. The intent is that ED's review would not impact the amount of time needed to approve the customer application nor would it require significant additional documentation beyond that currently required by the program.

The process outlined in this document describes the specific protocols for Energy Division review of custom applications which include utility submission of applications to ED and ED coordination with utility in the application review protocol. This detailed review protocol document is intended to be a living document that will be updated as the custom applications review protocol is refined and agreed to by the Utilities. The general approach and level of effort required for implementing the review process described here is meant to be frozen, although specific details will be added/modified as appropriate to allow Energy Division to perform the required review without disrupting normal program implementation process or placing undue burden on the Utilities in the process of administering these tasks.

By creating this document, ED and the Utilities acknowledge that by working cooperatively, the entire process for custom process can be improved, which should support the common goals; however, it should also be noted that many of the items proposed in this document, which are very impactful with regards to infrastructure and personnel requirments, may need to have an associated deployment timeline attached to them. The goal is that the ED and the Utilities would work on items that form part of a joint short and long term plan to phase in the infrastructure and guidance documents required to improve the process over a predetermined timetable with pre-established trigger events. This will be done in a properly sequenced and structured manner so

that required infrastructure changes would be planned and developed prior to them being a necessary operational requirement. Additionally, the implementation of these plan elements would be done in such manner that requirements are implemented so as to best utilize all available resources to maximize benefits.

Background

The utilities have expressed to Energy Division that it is not possible to provide Energy Division ex ante estimates for custom calculated measures or projects until a customer submits an application for a specific measure or project. Energy Division understands that due to their very nature there is a wide and somewhat unpredictable variation of custom measures and projects that will be encountered during the 2010-2012 programs cycle. For each of these custom measures or projects the energy savings impacts, net-to-gross values, effective useful lives, and participant and incentive dollar values are not known until a customer program application is approved by the utility. The Utilities have provided Energy Division with a forecast of their target total custom measure/project participation and have also provided a list of calculation methods they expect will primarily be used to produce ex ante energy savings claims. However, both the measure or project mix and the specific calculations methods used on each will vary as implementation proceeds.

For these reasons, the intent of "freezing" ex ante values of customer measures and projects while the same as that for deemed measures and project, the implementation of the freeze is different. Some calculation approaches/methods can be approved and "frozen;" however, the input values used in those calculation methods to produce ex ante values may vary by project for these custom measures and projects and hence need a different process for reporting. That process must allow an opportunity for Energy Division review and feedback to the Utilities. Additionally, the Utilities expect that there will be a need to alter existing methods or add new methods when specific custom projects are encountered that are not adequately addressed by the available methods approved at the time of the ex ante "freeze." Therefore, the "process" outlined below will be the agreed upon procedure for which the utilities will provide information/data to Energy Division for review of customized projects for the 2010-2012 program cycle. By freezing the approach, the initially agreed upon concept would not expand in scope, the projects that are completed by the utilities would not be subject to re-working once the incentive is paid, any changes made to this document or subsequent versions thereof, would be done by approval of all parties and would not be retroactive to previously approved projects or reporting processes.

With the expansion of Energy Efficiency (EE) Funding, both ED and the Utilities are experiencing a lot of growing pains as additional requirements have been added to our

respective workloads. The bullets below provide some background on the ramifications of some of the proposed changes.

- Many systems and resources initially set aside for reporting were based upon policies and processes that were in place in previous program cycles. While it is important to plan and start developing the new infrastructure to implement process improvements, it should be noted that many of the Utility tracking systems in place have not yet been updated to make many of the proposed changes. IT changes in particular are expensive and require several years of lead time to implement once a detailed plan for these changes is in place. Additionally, personnel need to be hired and trained to implement this work. This level of effort is non trivial and should be balanced against the value of the proposed changes. Once decided upon, changes should be frozen for a reasonable amount of time, until the next cycle of making these updates occurs.
- Additional processing requirements entail the funding, hiring, and training of more staff to perform these additional tasks. This takes significant time, funding and needs to have clear direction before it can be performed. These process requirements may impact program requirements both in terms of requirements and timing. This entails more than just the final reporting, it also involves changes to processes and procedures utilized by customers, program administrators (Utilities), third party contractors, industry, marketing firms, and third party reviewers. Significant changes may take months to enact and could indirectly negatively impact program participation.

Process Steps

1. **Custom measure/project calculation methodologies shall be based upon DEER methodologies as frozen for 2008 DEER version 2008.2.05 when possible or practical.**

   Basing custom measure calculations upon DEER methods shall mean that if a measure or project utilizes technologies or is subject to use patterns or interactive effects considerations that are either the same or similar to DEER measures the calculations shall be consistent with methods or values taken from DEER. ED will work with the Utilities to fully detail and justify these methods. Such methods shall not necessarily apply to calculations provided by outside consultants or other parties acting on behalf of the customer.

   This requirement is not intended to restrict the utilities ability to add new custom measures or restrict the custom measure calculation procedures for measures not within DEER. It is intended to ensure that custom measures that are variants of a DEER measure utilize methodologies derived from DEER to ensure the ex ante

estimates for similar deemed and custom measures are comparable. This is not intended to require the Utilities to utilize out-of-date codes or standards in their custom measure baseline calculations. It is expected that the Utility calculation methods will utilize DEER methods but incorporate current code requirements or minimum standards in effect the time a custom measure project is either permitted or implemented when 2008 DEER 2.05 methods pre-dated those codes or standards changes; thus, did not incorporate the current applicable codes or standards.

Energy Division will instruct the DEER team to maintain an up-to-date posting of all DEER analysis tools, models and documentation on changes to parameters or methodologies on the DEEResource.com website. The DEER team will also be instructed to provide assistance to Utility staff and their contractors to understand DEER methodologies and how to utilize the DEER tools in support of their development of workpapers and added tools for their ex ante estimates.

Timeline: ED to work with Utilities during the 2010-12 program cycle to develop, vet, and approve these guidelines and related documentation.
Trigger: Once the guidelines are complete and ED and the Utilities have agreed to them, the Utilities will start requiring the use of these methodologies for calculations performed internally by the Utility or its contractors. In the interim, the Utilities will encourage the utilization of known DEER approaches for custom projects.

2. **For all custom calculations the Utilities shall provide the Energy Division a complete list of all currently used and anticipated calculation tools**.

Tools, in the context of this document, shall mean software, spreadsheets, "hand" calculation methods with procedure manuals, or any automated methods. By March 31, 2010 the Utilities had submitted to Energy Division a list of all common tools expected at that time to be used for estimating ex ante values for custom projects. Each Utility shall provide a listing of all tools used to the ED website described under step 3 below. The archive shall contain listing of all current and previously utilized versions of all tools used in custom measures or projects claimed during the current program cycle. Except for the case of the Utility developed tools, the Utilities are not responsible for maintaining or archiving tools for ED as in many cases this is not legally possible, thus, proprietary tools and software are excluded from any requirement that would disclose intellectual property not owned by the Utility..

Tools that are freely available to the public via website download, or which cannot be legally re-distributed to the ED website, will be referenced by providing links to the public download website so any versions referenced on

the Utility submitted list may be downloaded. Tools that are created by the Utilities or their contractors (without any attached restrictions on distribution) must be supplied to Energy Division along with any available documentation by making them available on the ED website described in Step 3 below.

The submitted list of tools, tool weblinks shall be updated by the Utilities on an ongoing manner during the 2010-2012 implementation activity. The contents of the archive shall ensure that Energy Division can acquire any non proprietary tool used in the production of ex ante estimates for any accomplishment claim or submittals to Energy Division under item 4 below.

The tool archive shall include:

a. All manuals and user instructions, where applicable and not readily accessible in the public domain (assuming the Utilities have rights and access to them). 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 can be performed using the tool;
c. If several tools may be used to perform calculations for the same measure a clear description when one tool or another may be used will be provided if it is known at the time of the tool submission;. This is not intended to restrict the use of multiple tools for calculation of a given measure or technology.
d. When available, the Utilities will provide a list of key input parameters (default if known or site-specific) for each tool and for each general technology covered by a tool and the utility guidance or review criteria for those inputs will be provided;
e. The key user input parameters must include both baseline and installation-specific values;
f. An indication of different measure installation modes that the tools would be used if both RET and ROB calculations are performed.

Energy Division, at its discretion, will review tools as well as inputs to the tools for selected projects as part of its ex ante values review and freezing role. This review will encompass all aspects of custom project ex ante measure value development by the Utilities including that the input values and methodologies are reasonable and consistent with common engineering practices. This review will take place as the Utilities submit projects during the implementation period. Some tool information and documentation listed above was not completed by the end of March. In these cases the Utilities shall make their best effort to submit more complete information and documentation on those tools at the earliest time that the tools submission process is complete and shall provide

timely support to the Energy Division's reviewers on use of the tools until adequate documentation becomes available.

Energy Division, as time permits during the review cycle, may choose to provide the utilities with comments on one or more of the tools, or request more information or documentation on the tool. After review of a tool, Energy Division may require changes to a tool or removal of a tool from future use if that review has concluded that the tool produces erroneous results or the Utility generated calculation is not in conformance with DEER methods for technologies covered by DEER. If removal of a tool creates a void for the Utilities to accept calculations, ED should provide alternative calculation approaches. Energy Division shall provide the Utilities with a reasonable opportunity to cure any tool deficiency prior to removal from the list of acceptable tools.

ED is to provide a clear list and explanation of the "DEER" methods as part of the detailed process.

Timeline: ED to work with Utilities through the third and fourth quarter of 2010 to develop a detailed process that includes any relevant forms, submittal process, website, etc. In the interim, the Utilities will submit links to external tools via the basecamp website.
Trigger: Once this process is fully established, the utilities will provide ongoing monthly updates to the ED website of new tools going forward from the trigger date. Tools submitted to the Utilities prior to that date will be provided only for ED reviewed projects.

3. **The Utilities shall keep a complete up-to-date electronic project archive of all custom measures or projects for which applications are either approved or claims are made.**

Each Utility shall maintain a complete and up-to-date custom measure and project archive. The Utilities shall provide ED an updated summary of the archive on a weekly basis. The summary will identify project savings by program broken down by end use for each custom project. The utilities will upload project data for projects that are requested from this list.

ED will host an internet-accessible website that meets the most stringent security and legal requirements for all of the Utilities. Energy Division and its specifically designated consultants who have executed non-disclosure agreements shall be given ongoing access to this site for the specific purpose of providing early project feedback only. The site shall contain entries for all approved high impact projects as well as entries for all high impact projects in the approval process for those measures or projects whose estimated savings exceed any of the trigger

values listed in Step 4 below. The website will also be configured to allow searches and storage of project data by the agreed upon naming convention.

Based on this summary, ED may select a sample of non high impact projects where the Utility will provide all of the material used to document the project.

The submitted material will include (in electronic format): program application material, engineering calculations, tools used, model input/output and any other supporting documentation used to aid in supporting the cost effectiveness values claimed. The savings data provided by the Utilities will reflect standard industry engineering judgment and should be assumed to reflect such when the review is being performed.

At the completion of the projects for reporting, the utilities will provide a summary work paper for high impact (as defined in step 4) projects that provides some additional level of project description for only the largest projects. The intent of this work paper will be to clarify the basis for cost effectiveness values used in the project - not to create a project specific research study.

For projects that exceed the triggers described in Step 4 below, the ED may select a larger sampling of projects. It is also expected that projects that exceed these triggers will have more detailed documentation and/or more rigorous calculation algorithms, as described in Step 4.

On an ongoing basis each Utility will maintain their internal archive current for all applications which have been approved. It is understood that the contents of the archive for a project may be augmented as the project moves from an initial approval status to a final reported claim status. These additions are required to reflect the changes in a project from the planning stage to final installation and operation. Each utility claim or tracking data submission will include a reference for each custom measure or project to the archive entry for that item and the claim or tracking submission shall include an extraction of the archive for all measures or projects contained within that tracking submission claim.

Each Utility shall maintain a list or directory of all custom measure or project applications. This list shall include the project or measure classification information (the ED-Utility jointly established measure naming and classification system is to be used when completed), site and customer information (location, contacts, unique customer and unique site identifiers[1], etc), preliminary,

[1] Each IOU shall develop, in consultation with Energy Division, unique customer identifier system and shall assign an identifier that remains unique to each customer/participant from year-to-year. Additionally each IOU shall develop, in consultation with Energy Division, unique site identifier system and shall assign an identifier each site that remains unique to each site from year-to-year. Both these unique identifiers shall be used to identify all projects and measures, of any type (either custom or deemed), claimed by any IOU core program, any IOU 3rd party or any

approved and claimed (as available) savings estimates, site inspection dates and status, and Utility and Utility contractor contact information. Utilities will develop an agreed upon project identification system that will be used to uniquely name the name the detailed project files which are maintained when this has been completed. This name shall not be re-used or re-assigned to a later project. Each list entry shall contain an item that is the date of the most recent change to any information in that entry. The project list shall be updated weekly with all projects entering preliminary review for application or final approval if the estimated savings on the application exceeds the trigger values found in Step 4 below. This weekly update shall also apply to projects under final approval review if their preliminary savings estimates are altered such that the new estimates exceed any step 4 trigger values. This list is to be updated monthly to include all approved or committed applications.

Timeline: ED to work with Utilities through the third and fourth quarter of 2010 to develop a detailed process that includes submittal process, any relevant forms, website, etc. ED will also set up the infrastructure to process these uploads. In parallel the Utilities will set up the infrastructure to develop the means to upload this data.

In the interim, the Utilities will submit one-off projects request to ED for review for the projects with the greatest impact and uncertainties in baseline. ED and the Utilities will work together to create a common naming methodology during the 2010-12 program cycle. ED and the Utilities to work to develop a common template for custom measure work papers. The Utilities will work to start developing the infrastructure to flag these projects and create summary lists on a regular basis.

Trigger: Once this process is fully established, the Utilities will provide ongoing weekly updates to the ED of new projects and uploads of the high impact measures going forward from that date. Projects submitted to the Utilities prior to the trigger date will be provided only for if they are chosen for subsequent review during the program cycle. ED and the Utilities will implement the new naming system in the 2013-15 program cycle when the methodology and system updates are complete. Work papers would be developed once a template has been developed and agreed upon.

4. **For custom-project applications that meet or exceed the trigger points defined below the Utilities will provide those applications in electronic format to**

government partners. No customer or site shall have more than one identifier under the systems developed. These unique identifies shall be used to aggregate cumulative site or customer measure and project savings for use as the trigger values in step 4 of this document process.

Energy Division along with supporting documentation for their ex ante and incentive estimates.

As described in Step 3, the Utility custom measure and project archive will have special requirements for projects having current savings estimates which exceed any trigger values defined later in this step. These special requirements are triggered at any time once the project savings estimates exceed any trigger value listed later in this section, including initial application submittal or any time during the application review, approval or post-approval process. Those special requirements include: 1) early (as immediate as reasonably possible) availability of supporting documentation to be sent to the Energy Division and its approved consultants via the approved ED web site; 2) notification of Energy Division (and/or its designated consultants) of the scheduling of any site visits (either pre-inspection, ongoing inspection or M&V, or post-inspection) with the reasonable ability of Energy Division consultants to participate in the activity (either as inspection observers or M&V participants) via the ED web site.

As indicated in Step 3,on a weekly basis each Utility shall submit a list of measures or projects which have reached the trigger threshold since the prior such list submission. This submission shall be made to Energy Division at the website URL https://energydivision.basecamphq.com

The utilities normally schedule site visits during the pre-inspection period for retrofit projects. The utilities will provide notification to ED within 1 business day of scheduling the site visit if the scheduled site visit date is more than 5 days away, or notification within that same day if the site visit is schedule for less than 5 days from the scheduling date. ED will notify the Utilities prior to the inspection date if they plan to send a representative to the site. The submission is intended to allow Energy Division to review the application in parallel with the utility and allow Energy Division to coordinate any pre-installation inspections, customer interviews and pre-installation M&V or spot measurements with the related Utilitiy activities. It should be noted that at the time of this inspection notification, the Utilities will typically have not performed a complete project review. For this reason it is requested the applications that meet this trigger be submitted as early as possible to facilitate this coordinated activity. Energy Division will supply the Utilities with the results of their reviews and any M&V activities on an ongoing basis. Energy Division reviewers will interact with and provide feedback to Utility review staffs on an ongoing basis such that Utility reviewer are aware as early as possible of any important issues. The Utility is expected to consider the Energy Division review information in future application review and approval activities as well as future ex ante saving claims. However there is no requirement for any specific action in response to

information provided to the Utilities from the Energy Division's ongoing review process.

The trigger values shall be at the site level for a single application. The trigger values shall be ex ante site-level savings:

a. 250,000 kWh
b. 200 kW (per DEER definition)
c. 100,000 therms

These values are intended to capture approximately 10-20% of the largest projects where the majority of the project savings are custom measures. These projects may represent 50-70% of the total custom measure ex ante savings. This submission will be an on-line submission to Energy Division and will be initiated as previously indicated. This submission will be done at or before the time of utility application approval. Although this trigger will require a utility electronic submission to Energy Division, the implementation may proceed once the submission is complete. If deemed necessary an Energy Division M&V contractor will coordinate with the utility to perform any combination of:

a. reviewing project savings estimate calculations including either parameter values or tool estimate methods;
b. coordinated pre-/post- site inspections;
c. coordinated pre-/post- M&V for this project.

Energy Division will coordinate any M&V activities on these custom projects with the Utilities and may choose to utilize the Utilities or its own contractors, at Energy Division expense, to perform site inspections or pre-installation M&V.

Not all projects submitted for early review as a result of the above trigger will be subject to an Energy Division M&V activity. However, those projects selected for review may be later included as sample points into Energy Division's impact evaluations. Energy Division acknowledges that applications submitted as a result of meeting the trigger thresholds defined above may have ex ante estimates updated prior to being included in a portfolio savings claim submission. The assumptions made by a utility for ex ante claims would be frozen based on the utility's actual claim for that application including any modifications made prior to final incentive payment such as those based upon utility ex ante "true-up" from post-installation inspections, M&V or other adjustments as the utility deems necessary.

Timeline: ED to work with Utilities through the third and fourth quarter of 2010 to develop a detailed trigger submittal process, any relevant forms, website, etc. ED will also set up the infrastructure to process these uploads. In parallel the Utilities will set up the infrastructure to develop the means to flag and upload

this data. In the interim, the Utilities will submit one-off projects request to ED for review for the projects with the greatest impact and uncertainties in baseline.

Trigger: Once this process is fully established, the Utilities will provide ongoing weekly updates to the ED of new projects and uploads of the high impact measures going forward from that date. Projects submitted to the Utilities prior to the trigger date will be provided only for if they are chosen for subsequent review during the program cycle.

5. **Energy Division Early Feedback To Utilities**

During the custom measure review process described herein, Energy Division may develop information regarding specific projects, types of measures or general program performance that may be of high value to the IOUs and their implementers and reviewers. Energy Division will setup an informal procedure to allow direct feedback to the Utilities on a regular basis. Part of that procedure will be the Energy Division/Utility working group described below.

To facility future communication:

Energy Division and the Utility will establish a working group to allow an ongoing dialog on issues and problems in any aspect of the custom measure impact estimation process. This working group will provide a forum for all party's 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 Utilities on issues related to its impact evaluation activities that relates to the custom measure ex ante estimation process. These issues include items such as baseline definitions, net versus gross savings definitions and other items as any party deems necessary.

6. **Develop a process by which the Utilities and the ED can come to a common agreement on the methodology used to ascertain custom project baselines and installation type.**

The discussion proposed in figure one encompasses massive changes to the process used to claim custom projects. It also has many vague statements that indicate that this approach needs to be clarified further, including:

- Compelling Evidence
- Natural Turnover.
- CPUC Policy Requirements

The implications of these types of changes could have a large impact on how the Utilities deliver their custom programs. If in fact "early retirement" is meant to accelerate market transformation then the Utilities should be given the flexibly to deliver and claim these types of measures. The proposed process appears to make it difficult to claim anything that is not a replace on burn out measures, which would have deleterious impact on the ability to transform the market.

Changing this process at this point amounts to unfreezing the custom approach which contradicts the intent of this proposed process and the Decision. It is premature to make these changes without clear guidance and infrastructure to do so. This process also needs to reflect the realities of available field data and customer motivations, which are can vary significantly from site-to-site. This step encompasses two major items:

A. Reporting infrastructure and process to determine the proper installation type (ROB/RET/NEW/RET measures that are added to existing equipment). To accurately initiate this requires major updates to the following:

- Calculation tools
- Program guidelines
- Utility reporting and tracking systems
- ED web site and tracking systems
- Cost effectiveness (CE) calculator (currently the E3)

Making these changes requires that the final calculation approach is known and everyone is clear how to get there before initiating these changes. Update of the cost effectiveness calculator is the first step that is needed. It is clear that this is currently not the case. Given that the proposed cost effectiveness calculator is over one year late, and that the E3 cannot readily or adequately report projects' cost effectiveness values that have two separate components, it is proposed that this gets implemented as indicated below:

Timeline: ED to work with Utilities through the 2010 to 2012 program cycle to develop a new CE calculator that addresses this issue. In the interim, the Utilities will continue utilizing the current approach to claim custom project savings.

Trigger: Once this process is fully established and the new tool has been vetted, and agreed upon, the Utilities will start implementing infrastructure changes for the 2013-15 program cycle (depending upon timing) to accommodate this.

B. It is clear that there are no clear guidelines as to how to set baselines and installation type and there is much confusion as to how to deal with these issues. The process for determining project baseline and installation type should be thoroughly developed utilizing the best resources of the ED and/or other EM&V contractors that are knowledgeable of specific industry practices. There are proposed EM&V activities underway to assess RUL. These should be leveraged and an additional study undertaken to thoroughly research the following in order to create guidelines that ED and the Utilities would use. Ongoing data collection from Step 4 would feed into this process:
    - How is project specific "Industry Standard Practice" evaluated in absence of codes without doing a research study for each project? What is the required evidence that can be collected?
    - How is RUL determined in real life project applications when field data may be missing? What is the required evidence that can be collected?
    - What are the true installation types (RUL/ROB/NEW, etc.) and how should they be used, claimed, etc?
    - Strict adherence to code/no code basis may not be the proper way to characterize measure adoption that occur without Utility involvement. How should these be classified and dealt with?

Timeline: ED to work with Utilities through the 2010 to 2012 program cycle to conduct studies and develop a guidelines that addresses this issue. In the interim, the Utilities will continue utilizing the current approach to claim custom project savings, updating approach as necessary utilizing input from the ED "ride alongs."

Trigger: Once this process is fully established and the new guidelines have been vetted, and agreed upon, the Utilities will start implementing these changes for the 2013-15 program cycle.

Figure I
Guidance for Determination of Baseline for Gross Savings

The Utilities recommend that the above chart be broken into four (4) separate charts that lead to the 4 cases it describes. In addition each step in the decision process needs to be described with examples as needed. The vague statements indicated previously should be more explicit and should not make broad stements like "CPUC Requirements". The process should explicitly address specific technical, behavioral, and/or policy references that should be considred.

Pre-existing equipment[2] 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 which 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.)

CPUC policy rules and IOU program eligibility rules governed 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;

[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.

- 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 as 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) which 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 providing 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 market typical 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.