

RTR Appendix

Southern California Edison, Pacific Gas and Electric, Southern California Gas, and San Diego Gas and Electric (“Joint Utilities” or “Joint IOUs”) developed Responses to Recommendations (RTR) contained in the evaluation studies of the 2010-2012 Energy Efficiency Program Cycle. This Appendix contains the Responses to Recommendations in the report:

<i>2013 Custom Impact Evaluation Industrial, Agricultural, and Large Commercial</i> (2015, Itron, Calmac ID# CPUC0107.01, Work Order ED_I_IALC_2)

The RTR reports demonstrate the Joint Utilities’ plans and activities to incorporate EM&V evaluation recommendations into programs to improve performance and operations, where applicable. The Joint IOUs’ approach is consistent with the 2013-2014 Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification (EM&V) Plan (version 3) ¹ and CPUC Decision (D.) 07-09-043².

Individual RTR reports consist of a spreadsheet for each evaluation study. Recommendations were copied verbatim from each evaluation’s “Recommendations” section.³ In cases where reports do not contain a section for recommendations, the Joint IOUs attempted to identify recommendations contained within the evaluation. Responses to the recommendations were made on a statewide basis when possible, and when that was not appropriate (e.g., due to utility-specific recommendations), the Joint IOUs responded individually and clearly indicated the authorship of the response.

The Joint IOUs are proud of this opportunity to publicly demonstrate how programs are taking advantage of evaluation recommendations, while providing transparency to stakeholders on the “positive feedback loop” between program design, implementation, and evaluation. This feedback loop can also provide guidance to the evaluation community on the types and structure of recommendations that are most relevant and helpful to program managers. The Joint IOUs believe this feedback will help improve both programs and future evaluation reports.

¹ Page 336, “Within 60 days of public release of a final report, the program administrators will respond in writing to the final report findings and

recommendations indicating what action, if any, will be taken as a result of study findings. The IOU responses will be posted on the public document website.” The Plan is available at http://www.energydataweb.com/cpucFiles/pdaHomeDocs/2/2013-2014_Energy_Efficiency_EMV_Plan.zip (visited on 10/1/14).

² Attachment 7, p.4, “Within 60 days of public release, program administrators will respond in writing to the final report findings and recommendations indicating what action, if any, will be taken as a result of study findings as they relate to potential changes to the programs. Energy Division can choose to extend the 60 day limit if the administrator presents a compelling case that more time is needed and the delay will not cause any problems in the implementation schedule, and may shorten the time on a case-by-case basis if necessary to avoid delays in the schedule.”

³ Recommendations may have also made to the CPUC, the CEC, and evaluators. Responses to these recommendations will be made by Energy Division at a later time and posted separately.

EM&V Impact, Process, Market Assessment Study Recommendations						
Study Title: 2013 Custom Impact Evaluation Industrial, Agricultural, and Large Commercial (published 7/17/15)						
Program: Non-res Custom						
Author: Itron						
Available at: EnergyDataWeb.com (WO ED_I_IALC_2) or Calmac (#CPU0107.01)						
PG&E						
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1	6-2, 6-3	<p>All PAs had projects with negative and/or zero GRRs, and these served to lower the weighted realization rate considerably. Out of 189 M&V points, 31 projects, or 16 percent of the sample, had a GRR of zero or lower. The discrepancy factors that led to these low realization rates were identified in Chapter 3, and 23 of the cases were due to one of two factors – inappropriate baseline or ineligible measures.</p> <p>There is clearly a need for the PAs to improve in the areas of estimation accuracy and quality control for all projects, but in particular there is a need to focus on projects where the ex-post savings are zero or even negative. Baseline selection and eligibility screening are pretty basic steps in the development of ex-ante savings estimates and represent relatively easy-to-implement areas for improvement</p>	<p>Improve PA program requirements, manuals, training, and quality control procedures in order to screen out ineligible projects. A more thorough PA review of ex-ante documentation for eligibility and program rules is needed. Screening of routine maintenance and repair measures is a pressing issue in need of attention.</p>	All IOUs	Accepted	<p>PG&E - We are currently implementing a database that will include guidance on baseline selection, including an ISP when applicable. This database will help keep custom program stakeholders abreast of CPUC directives.</p> <p>We have created a Custom Implementation Team, on which a several QA/QC engineers will review a large subset of custom projects early on for eligibility and baseline issues, among other things. This will serve as an additional layer of expert quality control, as well as provide valuable feedback to reviewers and engineers assembling project documentation and savings claims.</p> <p>We are also creating a custom rulebook which contains feedback from various dispositions and policies. This rulebook will help technical reviewers, third parties, and customers understand custom policies and standardize submission of custom projects. One of these rules, for example, is that routine maintenance and repair measures are ineligible.</p>
2	6-2, 6-3		<p>Regarding eligibility, the evaluation team recommends that the PAs clearly document the energy efficiency action that is being performed and ensure the installed measures meet program payback requirements. As recommended in the previous evaluation cycles, the PAs should adjust the set of qualifying measures/technologies that are eligible for incentives and annually review the list of qualifying measures for each program to eliminate eligibility for those that became standard practice.</p>	All IOUs	Accepted	<p>PG&E - We have made it standard practice to describe the energy efficiency measures in detail in the project files. While we have done this to some degree in the past, we have not done it to the level of detail that we do now.</p> <p>We will continue to check that the project meets all rules of the program, including payback requirements if they are a part of the program design. Our custom programs typically do not have strict payback requirements, however we are looking into adding mechanisms to screen measures or projects based on payback criteria. We do adjust the qualifying measures as well as the incentive rates for measures, and we do conduct ISP studies with some regularity to invalidate measures that are considered ISP.</p>

SCE		SDG&E		SCG	
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Accepted	<p>SCE has implemented several project quality improvement efforts. In particular, a project narrative is required for high impact projects. The purpose the narrative is to summarize key customer and project opportunity details that demonstrate the influence and development of the project. Through this process, projects that do not support either influence or estimated savings, are excluded from the program participation process.</p> <p>For Third Party, The PFS standardization initiative was executed to improve the Project Feasibility Study document and overall project quality for SCE Third Party Pay-for-Performance programs. Standardizing the PFS Template allows implementers the ability to systematically capture program and technical reporting parameters and facilitates a more comprehensive project review at all levels (Contract Manager> Tech Reviewer > CS Staff). The standardized PFS template provides a more streamlined review of the project to the technical reviewers and improves compliance with Commission Staff mandates noted during the Ex-Ante Review (EAR) process.</p>	Accepted	<p>In response to similar recommendations made in the 2013 ESPI Scorecard, SDG&E created a working group dedicated to improve these items. Since that, our ESPI rating has improved.</p>	Accepted	<p>SCG - These results have been reviewed and are used to continually improve program performance.</p> <p>In regards to the ex-ante documentation, minor modification of the procedures and processes were made to produce a more thorough PA review. A significant revision of the process was done to address the eligibility and program rules in October 1, 2014.</p> <p>Maintainance and repairs are not eligible measures in SCG calculated programs (custom). SCG screens out maintainance and repairs through Account Executive training and its application process, program eligibility screening questionnaire and project history form. This will be further addressed in proposed CPUC changes to the ex ante review process. SW IOU manual for calculated programs explicitly states that maintainance and repairs are ineligible measures.</p>
Accepted	<p>SCE does not have stated program payback requirements. SCE believes strongly that payback requirements are considered as a customer driven decision point for financial investment and vary specific to the customer's needs.</p>	Other	<p>SDG&E's EEBI program does have payback requirements for projects. Regarding the qualifying measures, the program manual calls out specific measures that are known that are not eligible due to standard practice. Due to the nature of the custom program, SDG&E is frequently reviewing for those measures that may need to be evaluated for standard practice categorization.</p>	Other	<p>SCG - SCG does not have a formal payback requirements but SCG does look at it on a case-by-case basis. Customers' decisions to engage in a particular project is dependent on many variables in addition to simple payback, including but not limited to hurdle rates, internal rates of return, return rates of competing projects, limited capital project budget/resources.</p>

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3	6-2, 6-3		It is recommended that the PAs carefully review each of the 31 FSRs listed in Table 3-6 to identify the specific reasons that led to zero or negative savings, and use those lessons learned to improve related project practices. An array of different factors led to very low site-level GRRs, but some common reasons include: like-for-like replacement of equipment, improper application of ISP, baseline changed from ER to ROB/NR, improper application or interpretation of code requirements, and failure to apply the non-regressive baseline rule.	All IOUs	Accepted	PG&E - We will be reviewing the FSRs to identify project issues and key takeaways, many of which are mentioned in this report. We are also working to share the FSRs themselves with the respective project teams, so positive and negative feedback can be shared and iterated upon to improve the quality of custom projects. All of the factors identified in this recommendation that led to low project-level GRRs are addressed in either our custom rulebook and enhanced QA/QC process.
4	6-2, 6-3		It is recommended that the PAs make greater efforts to address the same types of projects that received low GRRs in this evaluation, given the significant downward effect that these projects had on the ex-post gross savings estimate.	All IOUs	Accepted	PG&E - We will review the FSRs to identify project issues and key takeaways, many of which are mentioned in this report. We are also working to share the FSRs themselves with the respective project teams, so positive and negative feedback can be shared and iterated upon to improve the quality of custom projects. All of the factors identified in this recommendation that led to low project-level GRRs are addressed in either our custom rulebook and enhanced QA/QC process.

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Other	<p>SCE engineering group has begun socializing the ineligibility of "like for like" measures with third party reviewers and will continue to do so going forward. When project ISP documentation is insufficient we have asked reviewers not to approve the projects until additional ISP justification is provided from project developers.</p> <p>Baseline applied to new construction projects at time of application, is set in alignment with active code compliance standards issued by CEC or ISP, or as dictated by Local Jurisdictions, or applicable Governing Bodies. The recommendation suggests PAs evaluate projects subject to future criteria that do not exist at time of application. When a customer commits to exceed code in place at the time of application it is unreasonable to reduce incentives if code has changed in their interim. This calls for further discussion to resolve this fundamental issue.</p> <p>Furthermore it is contradictory to transformation efforts, if customers adopt efficient technologies due to our direct influence at time of project application, but become Industry Standard practice at time of post installation evaluation.</p>	Accepted	There were 4 FSRs for SDG&E and these are being reviewed and are already being incorporated where applicable.	Accepted	<p>SCG - These results have been reviewed and are used to continually improve program performance.</p> <p>SCG made modification of the procedures and processes were made to produce a more thorough PA review of the Final Status Reports (FSRs). A significant revision of the process was done to address the FSRs in October 1, 2014.</p>
Accepted	Commission staff are providing SCE with immediate feedback on 2014 Custom projects with low or zero GRRs. This realtime feedback is presented immediately to program and engineering teams. Having an estimated impact on the population savings would also help socialize the impact of these projects.	Accepted	SDGE is already considering this for applicable projects	Accepted	<p>SCG - These results have been reviewed and are used to continually improve program performance.</p> <p>SCG made modification of the procedures and processes were made to produce a more thorough PA review of the Final Status Reports (FSRs). A significant revision of the process was done to address the FSRs in October 1, 2014.</p>

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5	6-3, 6-4	<p>The operating conditions discrepancy factor accounted for 30 percent of all downward evaluation GRR result adjustments. Some aspects of operating conditions estimation can be addressed through improvement in program implementation activities and quality control.</p> <p>Evaluated operating conditions were often found to be different than described in program project documentation. Per evaluation guidelines, measures are evaluated as-found, and the ex-post savings analyses were performed for the as-observed/verified conditions, including back-casting where relevant to current operations and did not include any forecasting</p> <p>Another key issue is that evaluators discover that the production period observed in the post-retrofit case is often too short (one week or less) and not typical of the production or operating variations that the equipment will be subject to over the course of a year</p>	<p>Increase focus on: a) accuracy of operating conditions, b) use of pre- and post-installation data and information, and c) keeping project documentation and tracking claims up to date with field information. The PAs should ensure the use of site-specific inputs whenever possible. Also assumptions used should reflect conservative values supported by strong evidence from secondary sources.</p> <p>PAs should consider increased use of, and improve incorporation of, data collection and monitoring to ensure a meaningful and accurate set of inputs or assumptions surrounding operations. Post-retrofit inspections should fully incorporate verification of measures, proper installation and operation, and any observed or otherwise known changes or deficiencies. PA staff should check that pre-installation and post-installation reports are well organized and complete, with measure counts, changes in operation, efficiency values, and operating parameters.</p>	All IOUs	Accepted	<p>PG&E - We do adjust savings calculations based on results found in the post-field inspection. However, the post-field inspection only represents conditions at a snapshot in time; the "actual" conditions can and do change over the course of time. We only claim savings based on conditions discovered ex ante; we cannot and do not project savings based on conditions that we speculate will be found ex post. We do use site-specific inputs when feasible, and we use values we believe to be conservative.</p> <p>Energy Insight, our new CRM, has been structured to improve the incorporation of project data and information in a reader-friendly manner. As mentioned throughout our comments, we have an enhanced QA/QC process to ensure that critical measure information is captured within each project.</p>
6	6-3, 6-4		<p>The evaluation team recommends that the PAs ensure that savings calculations are based on actual equipment-use schedules and reflect any changes to the post-installation operating parameters (such as flow rates, temperatures and set points, system pressures, production rates, and power measurements). The PAs should always include a quality control check on equipment operating hours, especially identifying any idle periods and removing those as necessary in the ex-ante energy savings models.</p> <p>Consideration should be given to selecting an appropriate and representative time period to use for data collection and savings determination. Increased use of selective parameter measurement using uncertainty analysis and short term monitoring is also recommended.</p>	All IOUs	Other	<p>PG&E - We do adjust savings calculations based on results found in the post-field inspection. However, the post-field inspection only represents conditions at a snapshot in time; the "actual" conditions can and do change over the course of time. We only claim savings based on conditions discovered ex ante; we cannot and do not project savings based on conditions that we speculate will be found ex post. We do use site-specific inputs when feasible, and we do always use conservative values.</p> <p>We recognize the need to balance the accuracy of the energy savings claim with timely customer incentive payments. Customers who have been properly influenced by the program and its incentives (i.e. non-freeriders) cannot afford to defer the incentive payment for months while M&V is conducted. We look forward to working with the CPUC and custom project stakeholders as to what might constitute an "appropriate and representative" time period.</p> <p>We recommend a study on the program costs of M&V, including use of a selective parameter measurement using uncertainty analysis, to compare the increased accuracy of additional M&V with the administrative costs of performing that M&V.</p>

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Accepted	<p>Our Quality Control checklist has been distributed throughout the company for stakeholder use in project development and review. Checklist item 18, which we are enforcing, states... "did the M&V plan follow the customized guidelines document and detail: What will be measured, whether pre and/or post M&V will occur, the duration (e.g. two weeks of logging) and time interval of measurement (e.g. 15 min increments), the accuracy & uncertainty of measurement equipment, and how the data will be used in the calcs?" We also must acknowledge that customer operating conditions can change over time, especially by the time the impact evaluation is performed, and the IOU has no control over this. Recommended activity is in part beyond traditional breadth and scope of the new construction program projects. Potentially delaying incentive payment to allow for occupancy and building ramp up is often not practical for the customers, who commonly rely on the incentives to fund the projects and may not be able to afford the extended wait period. Nonetheless our new construction program has incorporated CPUC guidance regarding default schedules. As a result we are now aiming to capture data from the customer reflecting site specific conditions, trued up at installation verification, while still within customer program engagement period.</p>	Accepted	<p>SDG&E has already increased our focus on operating conditions through QC, changes in documentation and additional process re-evaluation.</p>	Accepted	<p>SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014.</p> <p>SCG has continuously ensure the use of site-specific inputs when possible.</p> <p>Starting in 2014, assumptions reflects conservative values supported by strong evidence from secondary sources.</p> <p>In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement.</p> <p>As of April 1, 2015, SCG has various levels of review of calculation parameters based on the size of the project for all projects through the Post-Installation review process.</p>
Accepted	<p>Projects will continue to be trued up at the post installation phase per the inspections performed. Where possible, we obtain the latest EMS schedules, or short term M&V in accordance with our customized guidelines document that is updated regularly. However, even with this information or with a full year of M&V, the operating conditions may change again by the time of the impact evaluation. Recommended activity is in part beyond traditional breadth and scope of the new construction program projects. Potentially delaying incentive payment to allow for occupancy and building ramp up to point of stabilization, often not practical for the customers, especially since they commonly rely on the incentives to fund the projects and may not be able to afford the extended wait period. Nonetheless our new construction program has incorporated CPUC guidance, resulting in movement from a compliance format program based on generic energy modeling schedules created by CEC, to more of a performance program. As a result we are now aiming to capture data from the customer reflecting site specific conditions, trued up at installation verification, while still within customer program engagement period.</p>	Accepted	<p>To the extent possible, SDG&E already takes significant efforts to assure that operating parameters are accurate. However, it is sometimes difficult to balance DEER required methodology inputs against actual operation.</p>	Accepted	<p>SCG - In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement.</p> <p>As of April 1, 2015, SCG has various levels of review of calculation parameters based on the size of the project for all projects through the Post-Installation review process.</p>

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7	6-4		To help mitigate this issue, the PAs should wait for measure operation to stabilize and become typical prior to truing-up the ex-ante models and making a savings claim.	All IOUs	Other	<p>PG&E - We typically propose an M&V period and detail the length in the M&V plan submitted pre-installation. We do extend M&V periods depending on the variability in production levels.</p> <p>We recognize the need to balance the accuracy of the energy savings claim with timely customer incentive payments. Customers who have been properly influenced by the program and its incentives (i.e. non-freeriders) cannot afford to defer the incentive payment for months while M&V is conducted.</p> <p>We recommend a study on the program costs of M&V to compare the increased accuracy of additional M&V with the administrative costs of performing that M&V.</p>
8	6-4		<p>As stated in previous evaluation cycles, the PAs should use longer-term pre- and post-installation M&V activities and true-up the savings estimates to reflect most recent measure operation. The PAs should also normalize for production fluctuations between pre- and post-installation periods.</p> <p>In some cases, PAs should delay claiming energy savings for projects if the installation is not complete or if operations are very unstable or unrepresentative of expected ex-post conditions. The PAs should also ensure that savings estimates are always updated in the project documentation and tracking systems when operation conditions are found to have significantly changed.</p>	All IOUs	Other	<p>PG&E - We recognize the need to balance the accuracy of the energy savings claim with timely customer incentive payments. Customers who have been properly influenced by the program and its incentives (i.e. non-freeriders) cannot afford to defer the incentive payment for months while M&V is conducted.</p> <p>We recommend a study on the program costs of M&V to compare the increased accuracy of additional M&V with the administrative costs of performing that M&V.</p> <p>We do not claim savings for projects that are not complete, and we do update savings estimates and claims when on-site conditions have changed.</p>
9	6-4, 6-5		For projects entailing the use of simulation models, the evaluation team recommends that these models be re-run after the equipment is commissioned and building loads represent steady state operation	All IOUs	Accepted	PG&E - We do adjust savings calculations, including the rerunning of models, based on results found in the post-field inspection. We try to true-up after steady-state operations, although "steady-state" can and does change over the course of time.

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Other	<p>Waiting additional time for stabilization may not be possible for some of our customers, especially since they need the incentive to fund the project and may not be able to afford the additional wait period.</p> <p>Recommended activity is in part beyond traditional breadth and scope of the new construction program projects.</p> <p>Potentially delaying incentive payment to allow for occupancy and building ramp up is often not practical for the customers, who commonly rely on the incentives to fund the projects and may not be able to afford the extended wait period.</p> <p>Nonetheless our new construction program has incorporated CPUC guidance regarding default schedules. As a result we are now aiming to capture data from the customer reflecting site specific conditions, trued up at installation verification, while still within customer program engagement period.</p>	Other	<p>SDG&E would welcome further discussions with both ExAnte and Ex Post teams to determine the optimum timeframe for evaluation.</p>	Accepted	<p>SCG - In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement. SCG allows for troubleshooting, fine-tuning stable operating conditions to occur prior to an M&V period.</p> <p>As of April 1, 2015, SCG has various levels of review of calculation parameters based on the size of the project for all projects through the Post-Installation review process.</p>
Accepted	<p>Projects will continue to be trued up at the post installation phase per the inspections performed. We will re-emphasize for reviewers to re-verify the operating conditions at the IR phase to ensure they are still in alignment with the PA documentation. If installation is found to still be underway during our post-installation review, the reviewer will stop work until the installation is completed.</p>	Other	<p>SDG&E would welcome further discussions with both ExAnte and Ex Post teams to determine the optimum timeframe for evaluation. SDG&E no longer claims any savings for projects that are not complete.</p>	Other	<p>SCG - In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement.</p> <p>SCG needs clarification on what a longer-term M&V activities entails. SCG's standard time period for its M&V activities is three months; However, there are instances where on a case-by-case basis there would be longer periods for its M&V activities. Also, SCG aligns this time period with the customer's operations.</p>
Accepted	<p>SCE runs simulation models using current information in the post installation review process.</p>	Accepted	<p>For modeled projects, re-running simulation models is reasonable.</p>	Accepted	<p>SCG - SCG runs simulation models using current information in the post installation review process.</p>

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10	6-4, 6-5		<p>For pump efficiency improvement projects, use actual pump efficiency tests, not estimates.</p> <p>PAs should ensure incorporation of needed aspects of pre- and post-installation review, as specifically related to operating conditions, into program manuals by addendum and in their next revisions. PAs should delineate expectations for post-retrofit inspection paperwork and require inspectors to identify, collect and record pertinent measure operating parameters, as well as quantities in both pre-installation and post-installation efforts. PAs should consider holding multiple trainings, regularly (e.g., quarterly), with internal staff, implementers, and PA technical reviewers, to ensure improvement and enhanced documentation. Examples of thorough, complete pre- and post-installation reports could be provided in order to set standards for acceptable data collection and reporting, and thereby work to ensure comprehensive and consistent M&V practices well beyond a cursory verification that new equipment was present at a given site.</p>	All IOUs	Accepted	<p>PG&E - We do use actual pump efficiency tests in some subprograms, like APEP. In other cases, we do not typically conduct pump efficiency tests due to time and cost constraints. We will continue to work with the CPUC and custom project stakeholders to establish cost effective levels of M&V for each size of project.</p> <p>We do incorporate guidance into future iterations of program manuals. We do provide guidance on inspection protocols and have organized inspection results within Energy Insight. We do hold regular trainings with internal staff and technical reviewers and will continue to do so. Additionally, the custom team will be working with a third-party professional training company to facilitate and improve training practices.</p> <p>Finally, we would welcome an example pre and post installation inspection report so we can see what CPUC expectations are surrounding data collection and strategize to deliver upon those expectations in the most cost-effective manner possible.</p>
11	6-5, 6-6	<p>Improper baseline specification resulted in a substantial number of adjustments, resulting in significant impacts to ex-ante savings claims for both electric and gas projects. These adjustments arose from improper project baseline specification, improper baseline operation, or crediting new or replacement equipment with improved efficiencies when, in reality, the new equipment efficiency did not exceed industry standard practice.</p> <p>There was generally good agreement on project type and project baseline when comparing PA and evaluator selections. ER and ROB projects were the most commonly overturned project types across all PAs</p>	<p>Increase efforts to ensure conformance with CPUC baseline policies and make a greater effort to examine existing equipment RUL. The PAs should mount a concerted effort to adopt baseline specification practices in conformance with Decision 11-07-030 and CPUC policy. Conformance with these guidelines and accurate specification of project baseline type, such as early retirement, normal replacement, replace on burnout, system optimization, new construction, and add-on measure would eliminate many of these issues. The PAs should amend program rules to eliminate incentive eligibility for measures that are not more efficient than code or ISP (or what would otherwise be required to meet performance requirements). Careful consideration must be given to avoid regressive baselines (baselines that are less efficient than current operations). If the efficiency of the pre-existing equipment is higher than the replacement equipment baseline, then the PAs should select the pre-existing equipment as the baseline.</p>	All IOUs	Accepted	<p>PG&E - This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here:</p> <p>[Restate from 2010-12] PG&E - ISP studies are conducted for certain technologies and, where applicable, used to sunset measures such as POCs, wine tank insulation, and server virtualization. ISP Studies are also used to establish the baseline for customers' custom applications. For example, the Data Center Baseline, Healthcare Baseline, and Waste Water Treatment Plant Baseline Studies are conducted on a regular basis to establish ISP. PG&E has implemented enhanced QA and QC elements related to customized projects. We instituted a significant process improvement called the "Initial Custom Project Package Review Checklist for Core, 3P, GP." The collaborative efforts between PG&E's Engineering Services, Project Office and CPUC resulted in a comprehensive checklist for external and internal reviewers. Examples of checklist requirements include project scope, baseline, EUL, RUL, ISP, Showstoppers, etc. If the projects do not meet the checklist requirements, Project Office Program Managers return the projects to the technical reviewers for further work. Please see the Appendix for a copy of the Checklist. This is an ongoing effort between the joint IOUs and the CPUC as it relates to custom programs. PG&E trains all stakeholders in updated requirements that are aligned with the ex ante review process. For QC, PG&E has implemented a checklist used for custom projects that is used to catch common errors during the project development and review processes.</p>

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Other	The energy advisor program is planning to perform more post-installation inspections so that more projects include both a pre and post test in the documentation.	Accepted	SDG&E has worked closely with the implementor to refine the level of documentation for pre and post installation. For the smaller pump projects, these are likely to fall under the threshold required for low impact measures thus requiring a lower rigor of evaluation.	Accepted	SCG - SCG will use actual pump efficiency tests or deemed efficiency increase from 68% to 75% as a placeholder until an IST verifies the pre and post pump efficiency.
Accepted	SCE developed a 3 hour training on installation types and EUL/RUL and is currently delivering this throughout the company. This is to increase understanding of CPUC requirements and to ensure that all stakeholders, including account managers, are assigning the correct installation types for each measure.	Accepted	Improper baselines have already improved for SDG&E, however, we will continue to focus on this issue.	Accepted	SCG - SCG has implemented enhanced QA/QC elements related to customized projects to conform with CPUC baseline policies. And SCG will continue to do so for all future projects.

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12	6-6	PA RUL documentation was found to be significantly lacking. For appropriate selection of baseline, RUL assessment is needed for all projects except capacity expansion and new construction projects. For example, RUL assessment of add-on projects is used to examine the expected remaining life of the host equipment, for the purposes of setting EUL for the add-on measure. Other examples of applicability of RUL are more straight-forward and therefore not worthy of further mention here. For all early replacement (ER) projects, the PAs should provide and clearly document the remaining useful life (RUL) of the pre-existing equipment. It is recommended that the PAs carefully review the evidence collected to estimate the RUL for all early retirement applications. The PAs must also conduct appropriate due diligence to insure that for an ER project the current removed system would be able to meet the service requirements of the newly installed program equipment and that failure of the replaced equipment is not imminent	Clearly identify project event in terms of natural replacement, replace on burnout, early replacement, new construction, and add-on equipment, and set the appropriate baseline accordingly. Realistic baselines based on code, current industry standard practices, or pre-existing equipment (with an associated RUL) should be clearly identified, supported and documented. The PAs should carefully review current codes and any code changes that affect the baseline selection. If a claim is made for program-induced early retirement of functioning equipment, claims should include documentation of the remaining useful life (RUL) of the equipment replaced and the baseline used for the post-RUL period. Some evidence of the adoption of this recommendation has been seen in the ex-ante review process and in the PAs' 2013 procedures manual.	All IOUs	Accepted	PG&E - We do indicate the Measure Application Type for every measure and baseline appropriately. We now better document RUL of existing equipment for Early Retirement and Retrofit Add-on measures, but not for Normal Replacement, Replace on Burnout, or New Construction. RUL is assumed to be between zero and one for Normal Replacement and Replace on Burnout; our claims use an RUL of zero. We are planning to implement additional Early Retirement guidance which will help stakeholders document an ER claim. We are currently implementing a database that will include guidance on baseline selection, including an ISP when applicable. This database will help keep custom program stakeholders abreast of CPUC directives.
13	6-6	Greater PA Effort is Needed for Proper Baseline Selection. Choosing a proper baseline requires systematic examination of a number of factors. Evaluation efforts led to a number of cases where PA baseline selection was overturned.	Disseminate information on baseline selection to ensure best practices across program staff, implementers and customers. The evaluation team recommends that the PAs should provide their program staff, implementers and customers with the most current industry standard practice (ISP) studies and the CPUC's guidance documentation. This will help better align the PA's baseline selection with the CPUC's directives.	All IOUs	Accepted	PG&E - We are currently implementing a database that will include guidance on baseline selection, including an ISP when applicable. This database will help keep custom program stakeholders abreast of CPUC directives.
14	6-6,67	Greater PA Effort is Needed for Proper Baseline Selection. Choosing a proper baseline requires systematic examination of a number of factors. Evaluation efforts led to a number of cases where PA baseline selection was overturned.	The PAs need to do a better job of ensuring that baseline equipment specifications are capable of meeting post-installation operating requirements, that the baseline selected is consistent with the project type, and that regressive baseline considerations are examined. The evaluation team recommends that for all capacity expansion projects, the PAs ensure that the baseline equipment meet the post-install operating and production capacities. In-situ equipment (unless it is above code or ISP) is an invalid baseline to calculate energy savings for normal replacement (NR), replace-on-burnout (ROB), capacity expansion and new construction (NC) projects. Additionally, the evaluation team recommends that the PAs carefully review projects for possible regressive baselines and document the pertinent findings.	All IOUs	Accepted	PG&E - We are currently implementing a database that will include guidance on baseline selection, including an ISP when applicable. This database will help keep custom program stakeholders abreast of CPUC directives.

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Accepted	SCE developed a 3 hour training on installation types and EUL/RUL and is currently delivering this throughout the company. This is to increase understanding of CPUC requirements and to ensure that all stakeholders, including account managers, are assigning the correct installation types for each measure.	Accepted	This is already being addressed. SDG&E reorganized the engineering department in 2014, implemented a secondary QC review, initiated formal process documentation and are initiating a new engineering tracking system.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014. SCG does identify projects based on similar terminology.
Accepted	We have distributed the Early Retirement Guidance Document and developed a 3 hour training (referenced above) to translate this information for our stakeholders. We will also direct our stakeholders to the CPUC website where approved ISP studies and guidance documents are posted.	Accepted	This is already being addressed. SDG&E has continued training for sponsors and implementer and will make sure that this topic is more readily apparent in future sessions.	Accepted	SCG - SCG will continue review and educate its customers on ISP studies and CPUC's guidance documentation as they become available to help better align the PA's baseline selection with CPUC's directives.
Other	Relative to new construction projects, baseline is always ISP or Code at time of Customer application.	Other	SDG&E does not see a significant number of these projects but will remain watchful for these scenarios.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014.

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15	6-7	Inadequate or suboptimal methods, models, and inputs were observed in the M&V sample. The evaluation used a different model than the PA in roughly 30 percent of projects included in the evaluation gross impact sample. The evaluators often found it necessary to modify PA models, inputs and assumptions. In some cases, the PA did not properly take into account key factors that may impact the savings such as weather/seasonality/production normalization. Generally models needed to be adjusted because the PAs did not properly account for CPUC policy and guidance, previous EAR guidance, and standard evaluation practices	Continue to review and improve impact methods and models through review of evaluation results, industry best practices, and collaboration with the CPUC's ex-ante review process. The PAs and their subcontractors should review the methods and models used in this evaluation for projects that were identified as having inadequate ex-ante calculation approaches. PAs should continue to improve their modeling approaches through systematic review and assessment of approaches developed and used internally, by third parties, by professional organizations, and by programs in other jurisdictions. In addition, the PAs should continue to work closely and collaboratively with the CPUC's ex-ante review process to assess and agree on modeling approaches based on the results of ex-post evaluation and ongoing ex-ante review.	All IOUs	Accepted	PG&E - This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here: [Restate from 2010-12] PG&E - PG&E has implemented enhanced QA and QC elements related to customized projects, including developing internal tools and techniques for internal and external partners. PG&E instituted a significant process improvement called the "Initial Custom Project Package Review Checklist for Core, 3P, GP." The collaborative efforts between PG&E's Engineering Services, Project Office and CPUC resulted in a comprehensive checklist for external and internal reviewers that incorporates a number of items including methods and models through review of evaluation results, industry best practices, and collaboration with the ex ante review process. Examples of checklist requirements include project scope, baseline, EUL, RUL, ISP, Showstoppers, etc. If the projects do not meet the checklist requirements, Project Office Program Managers return the projects to the technical reviewers for further work. Please see the Appendix for a copy of the Checklist. This is an ongoing effort between the joint IOUs and the CPUC as it relates to custom programs. PG&E is working closely with program staff, field engineers, implementers and other key stakeholders to identify continuous improvement opportunities, incorporating findings into the custom process in a timely manner and ensuring trainings occur frequently and are tailored for the right audience. PG&E welcomes the opportunity to further collaborate with CPUC engineers and evaluators. This practice was launched after the release of the 2010-2012 Interim Custom Impact Evaluation in December 2013. We look forward to continuing this transparent and open exchange.
16	6-7		The evaluation team recommends that the PAs provide their implementers and/or customers with the most current, standardized or CPUC-approved calculation tools.	All IOUs	Accepted	PG&E - We are committed to maintaining the CTA and ensuring that all custom project stakeholders have access to these resources. We have collaborated with the CPUC to integrate CPUC policy and guidance into the calculation methodology for one piece of modeling software, to foster transparency into the CPUC-required savings calculations and allow better standardization across custom projects using that software.
17	6-7, 6-8		Further, the evaluation team recommends that the PAs include in each application file the live, unlocked, non-password protected spreadsheet models. For projects entailing simulation models, the PAs should record key model inputs and outputs, in addition to providing the final analysis spreadsheets/models.	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the presence of a live, unlocked spreadsheet and/or model.

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Accepted	We will be sharing CPUC EAR findings with our reviewers and developers at our Q3 meeting and going forward to improve impact methods and best practices. We will also continue to work with the CPUC on improving our models and procedures, such as for the SimCalc tool.	Accepted	SDG&E has a concentrated effort to review this process and welcomes additional CPUC Ex Ante Staff involvement.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014.
Accepted	We have provided a list of SCE preferred tools in our customized guidelines document and encourage our stakeholders to submit projects with them. The new construction program is in agreement with recommendation, as we are providing the requested documentation. Timely review of new or updated modeling tools is always appreciated, allowing for any reviewer questions to be addressed early.	Accepted	SDG&E holds ongoing training to provide customers and implementers with the most current tools available and will continue to do so.	Accepted	SCG - SCG will continue its practices to use standardized and/or approved calculation tools. SCG agrees that they will provide their implementers/customers with the most current calculation tools. SCG works closely with CPUC to ensure that it's calculation tools meet CPUC standards.
Accepted	We submit models in this fashion currently and will continue to do so. The spreadsheets do include key model inputs as well as final analysis. The new construction program is in agreement with recommendation, as we are providing the requested documentation.	Accepted	SDG&E already makes every effort to comply with this.	Accepted	SCG - As requested through the ex-ante and ex-post review process, SCG provides unlocked, non-password protected spreadsheet models to CPUC. The spreadsheet does include key model inputs and outputs as well as final analysis models.

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18	6-7, 6-8		Carefully review ex-ante savings claims, inputs, and calculation methods. Ex-ante savings estimates and calculation methods should be more thoroughly reviewed and approved by PA technical staff prior to finalization of incentives and savings claims. These reviews by knowledgeable technical staff can help ensure reliable and accurate impact estimation.	All IOUs	Accepted	<p>PG&E - We have created a Custom Implementation Team, on which a several QA/QC engineers will review a large subset of custom projects early on for eligibility and baseline issues, among other things. This will serve as an additional layer of expert quality control, as well as provide valuable feedback to reviewers and engineers assembling project documentation and savings claims.</p> <p>This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here:</p> <p>[Restate from 2010-12] PG&E - PG&E has implemented enhanced QA and QC process to ensure custom projects that are submitted align with current ex ante policies and guidance. PG&E instituted a significant process improvement called the "Initial Custom Project Package Review Checklist for Core, 3P, GP." The collaborative efforts between PG&E's Engineering Services, Project Office and CPUC resulted in a comprehensive checklist for external and internal reviewers. Examples of checklist requirements include project scope, baseline, EUL, RUL, ISP, Showstoppers, etc. If the projects do not meet the checklist requirements, Project Office Program Managers return the projects to the technical reviewers for further work... This is an ongoing effort between the joint IOUs and the CPUC as it relates to custom programs.</p>
19	6-7, 6-8		Conduct periodic due diligence to ensure programs adhere to PA and CPUC impact estimation policies, guidelines, and best practices. Continue to work closely and collaboratively with the CPUC's ex-ante review process. Given the multitude of non-utility and utility programs, the PAs should consider interventions such as increased training and project scrutiny to ensure the most accurate savings claims consistent with eligibility, baseline and program rules. In addition, the PAs should continue to work collaboratively with the CPUC's ex-ante review process and look for ways to leverage lessons learned from that process to implement their own internal ex-ante review of third party programs.	ED-Recommendations for IOUs to collaborate or work with ED on something	Accepted	<p>PG&E - We have created a Custom Implementation Team, on which a several QA/QC engineers will review a large subset of custom projects early on for eligibility and baseline issues, among other things. This will serve as an additional layer of expert quality control, as well as provide valuable feedback to reviewers and engineers assembling project documentation and savings claims.</p> <p>We are also creating a custom rulebook which contains feedback from various dispositions and policies. This rulebook will help technical reviewers, third parties, and customers understand custom policies and standardize submission of custom projects.</p>
20	6-8	PA models were not always calibrated using observed conditions. Key inputs and observations, when available, based on ex-ante field verification, installation reports and M&V, were sometimes not subsequently incorporated within the ex-ante impact models.	The PAs should true-up savings based upon post-installation data, such as by calibrating the simulation model to utility usage data. For example, for large energy end-uses, the evaluation team recommends that the PAs use pre-and post-installation billing or AMI data (if available) as a sanity check or to better calibrate the actual energy savings. The PAs should also make better use of available post-installation M&V power measurements, whether spot readings, short-term or long-term interval data.	All IOUs	Accepted	<p>PG&E - We typically calibrate models in pre-field and incorporate post-install M&V into our claims; we will continue to keep this an area of focus for custom project stakeholders.</p> <p>SCADA data, which we use when possible to validate operating schedules, typically only collects amperage. We have instructed custom project stakeholders to take spot measurements on power for PF purposes.</p>

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Accepted	Savings are carefully reviewed by our reviewers and SCE engineering meets with them regularly to ensure they are up to date on the latest policies and practices. Reviewers have also implemented their own internal QC process of their own reviews so that each project is looked at by two engineers. SCE update the customized calculation guidelines document containing best practices for calculation methodologies on a quarterly basis.	Accepted	SDG&E has a concentrated effort to review this process and welcomes additional CPUC Ex Ante Staff involvement.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014.
Accepted	SCE is implementing a new triage process to select a sample of pre-install projects for high level review prior to third party review commencing. SCE will be checking for CPUC "showstoppers" that we have learned to check for based on interaction with the CPUC in the EAR process. We will be working with project developers and applicants to rectify any discrepancies that are identified.	Accepted	SDG&E has utilized weekly calls, requests for early opinion and information exchange sessions with the Commission Ex Ante Staff to facilitate the collaborative relationship we wish to achieve.	Accepted	SCG - IOU and CPUC work collaboratively together during the ESPI ex ante review process to ensure adherence to the CPUC guidance.
Accepted	Projects will continue to be trued up at the post installation phase per the inspections performed. QC checklist item # 16 states ... "16. For savings calculated using energy models, did the applicant state that the energy model was calibrated to existing kWh, kW, and therm usage or state why calibration was not performed?" We are also requiring billing data to be included for more projects going forward for the purpose of sanity checking the savings.	Accepted	SDG&E has a concentrated effort to review this process and welcomes additional CPUC Ex Ante Staff involvement.	Accepted	SCG - Since Q1 2006, SCG has utilized true-up savings for large projects (>200,000 therms) through its M&V process. Recently, SCG has revised its post-installation procedures to include true-up for projects of all sizes.

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21	6-8		For projects entailing weather sensitive measures, the PAs should verify that the correct weather files are used in the analysis. Regarding peak demand analysis, adopt CPUC protocols and procedures as they relate to the California climate zone peak period definition. Peak impact estimates should reflect loads during the California climate zone three-day period, if data was collected during the actual three-day peak for that region or during the peak summer time period of 2-5pm from June 1 through September 30. Calibration considerations noted above apply also to peak, including the use of post-installation M&V power data that best represents the coincident peak period.	All IOUs	Accepted	PG&E - We do verify climate zone, zip code, and weather files for custom projects; however, we recognize room for improvement in our verification process. We will consider adding this to our new QA/QC process with the Custom Implementation Team. We will be working to clarify the DEER peak kW savings calculation with custom project stakeholders. A recent survey of our own projects confirmed that in a subset of projects peak demand calculations were not performed according to the peak period method described here, which is consistent with our policy. We are retraining stakeholders on this topic and emphasizing its importance in our custom rulebook.
22	6-9, 6-10	On a statewide basis, the NTGR averaged 0.54. NTGR results indicate a medium level of free ridership and a resulting medium level of program influence. Although this demonstrates some improvement since PY2010-2012, this value continues to be similar in magnitude to NTGRs from the past several evaluation cycles, as shown in Table 6.1. The general conclusions are that free ridership has not changed substantially for custom programs. While we are sensitive to the fact that it is not easy to provide the level of expertise needed at the right time to move industrial customers to higher levels of efficiency given their complex production- and site-specific processes, we also observe that very few readily identifiable steps appear to have been taken by the programs with the specific goal of reducing free ridership.	Adopt procedures to identify and affect projects with low program influence. The PAs should carefully review projects during the project development stage for potential issues associated with a high likelihood of very low program influence. This process should provide timely feedback to program implementers regarding the estimated level of program influence. This would afford implementers an opportunity to influence projects found to have low program attribution by encouraging project decision makers to adjust the project scope to higher efficiency levels, where warranted.	All IOUs	Accepted	PG&E - This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here: [Restate from 2010-12] PG&E - PG&E will cooperate with statewide teams to develop procedures. PG&E has developed and implemented a free-ridership screening form, similar to SDG&E's to help ensure program influence. PG&E is engaged in continuously improvement activities to reduce free ridership.

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Other	SCE would like to discuss the appropriate protocols for weather related data including data validation with Commission Staff. SCE has a substantial weather data network that if used appropriately would benefit various DSM programs and actors.	Accepted	SDG&E concurs with this recommendation and has made some corrections. We will continue to focus on this area.	Accepted	SCG - On a project by project basis, SCG will determine whether its standard time period for its M&V activities is three month would be sufficient to capture the weather sensitive measures and would adjust accordingly. SCG will also aligns this time period with the customer's operations.
Other	SCE has implemented several project quality improvement efforts. In particular, a project narrative is required for high impact projects. The purpose of the narrative is to summarize key customer and project opportunity details that demonstrate the influence and development of the project. Through this process, projects that do not support either influence or estimated savings, are excluded from the program participation process.	Accepted	SDG&E is continually seek ways to revamp the processes and accurately document program influence. SDG&E welcomes additional clarity regarding the level and type of documentation that will necessitate appropriate program influence.	Accepted	SCG - SCG has implemented enhanced QA and QC elements related to customized projects. SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014. SCG also provided extensive training to account executives and implementers on this new process.

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23	6-9, 6-10	<p>Program influence was low in many cases for a number of different reasons. In some cases, program claims were made on a number of projects that customers initiated primarily for non-energy savings reasons and for which no alternative was ever considered. In some instances, program incentives were offered for measures and technologies that are industry standard practice (thus significantly increasing the odds of free ridership in any given application). Program attribution was also limited when program incentives were offered for projects that were being implemented by end users in response to mandates from other regulatory agencies (for example, citations from air resource districts). Further, for those projects already at an advanced stage, where equipment had already been budgeted, program influence was very low. There were also instances where incentives were provided to firms that were already very advanced in their adoptions of energy efficiency, such as companies with established energy efficiency procurement policies or mandates, including national chain and big box stores.</p>	<p>Adjust the set of technologies that are eligible for incentives. Periodically review the list of qualifying measures for each program and eliminate eligibility for those that have become standard practice. At a minimum, such reviews should take place annually. Measures that are already likely or very likely to be typically installed should not qualify for incentives. Although identification of such measures can be difficult in practice in the industrial sector, a number of such measures can be identified through investigation of industry practices (for example, interviews with manufacturers, distributors, retailers, and designers), analysis of sales data, and review of evaluation results. In determining which measures to retain and which to eliminate, a balance must be struck between reducing free ridership and avoiding significant lost opportunities. Ideally, sub-technology niche markets can be selected for the program that are less well established, but where substantial technical potential still lies.</p> <p>In addition, program implementers should actively highlight and promote technologies that are less well-adopted, cutting edge, or emerging technologies. Such measures are</p>	All IOUs	Accepted	<p>PG&E - This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here:</p> <p>[Restate from 2010-12] PG&E - PG&E performs low-rigor ISP studies as warranted if measures could potentially be, but are not known to be, ISP. Please note that depending on the industry structure, a measure might be ISP within one segment e.g., large industrial and not within another segment of the same industry. PG&E identifies code baseline and ISP early on and ensures those standards are exceeded if a project is to be incented. PG&E understands the importance of baseline and works with field engineers and implementers to ensure current CPUC rules are followed per the EE Policy Manual v5. PG&E appreciates the recommendation for performance-based savings requiring a project to reach a minimum savings threshold, as recommended for wastewater plants, as a way to reduce free-ridership. PG&E is currently running a proof-of-concept design to test the viability of whole building approaches to incentivize deep retrofits. The Commercial Whole Building proof of concept relies on predictive, billing analysis based analytics to enable more scalable, and verifiable performance.</p>
24	6-9, 6-10		<p>Adopt procedures to limit or exclude known free riders. One way to accomplish this is to conduct screening for high free ridership on a project-by-project basis. In cases where likely high free ridership is found, the program implementer should encourage such customers to move to a higher level of efficiency or encourage a bundled retrofit to ensure deeper savings. Either of these options could result in funding a project that would not have been implemented absent the program. Another option is for the program to set the threshold for incentive eligibility higher across-the-board so that all such projects will need to meet a higher efficiency threshold to qualify.</p> <p>One way to assess the rate of free ridership likely on a given project is to critically examine the key reasons behind the project before the incentive is approved.</p>	All IOUs	Accepted	<p>PG&E - This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here:</p> <p>[Restate from 2010-12] PG&E - PG&E will cooperate with statewide teams to develop procedures. PG&E has developed and implemented a free-ridership screening form, similar to SDG&E's to help ensure program influence. PG&E is engaged in continuously improvement activities to reduce free ridership.</p>

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Other	<p>SCE will continue to review measures for likely widespread adoption, however the program is open to all customers and while some customers may be adopting these measures as common practice other in the same segment but of varying size and level of technical expertise most likely are not adopting those same measures as common practice. Perhaps we can split the program into Large customer and Medium/Small customer. If we can apply a higher NTG, consider total project, we can accelerate the technology adoption amongst these customers that likely lack the detailed business practice information required to go through an early retirement project .</p> <p>SCE adopted a higher incentive measure for target technologies back in 2013. This was in support "emerging technologies".</p> <p>SCE provides a comprehensive bonus to encourage deep energy savings projects that include multiple technology types and/or enrollment in other IDSM programs such as DR. However the savings validation process is unappealing to the type of customer that least likely to be a free rider and for which the prescriptive program is easiest to participate.</p>			Accepted	<p>SCG - SCG will continue to modify technologies eligible for custom incentives based on ex post evaluations and ISP studies.</p>
Other	<p>SCE has implemented several project quality improvement efforts. In particular, a project narrative is required for high impact projects. The purpose the narrative is to summarize key customer and project opportunity details that demonstrate the influence and development of the project. Through this process, projects that do not support either influence or estimated savings, are excluded from the program participation process.</p>	Accepted	<p>SDG&E has attempted to implement a free ridership screening process. While the process has not yielded the results we were hoping for, we are continually looking for new and better ways to assess and screen for the free ridership issue. We are looking into tools to better help account management staff document the influence early on.</p>	Other	<p>SCG - SCG will collaborate with statewide teams to develop procedures.</p>

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25	6-9, 6-10, 6-11		<p>Make changes to the incentive design. Tier incentives by technology class, such as equipment type, to enhance promotion of technologies that are less well accepted versus those that are already established. Under this approach, the incentive level for less widely adopted and emerging technologies would be higher, while the incentive level for more widely-adopted measures would be lower.</p> <p>Consider incorporating a payback floor, excluding projects for which the payback time is less than, say, one year. Although it is certainly true that many customers do not adopt attractive efficiency projects with very low paybacks, a payback floor can still be helpful, particularly if it is not set too high and if the administrator is allowed some flexibility in its application. Several program administrators in other parts of the country have used payback floors effectively, although such criteria present project cost verification challenges. A one year floor guideline makes sense because projects with a one-year payback or less can usually be funded out of the current year's energy budget. The use of a</p>	All IOUs	Other	<p>PG&E - This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here: [Restate from 2010-12] PG&E - Program design teams will take this under advisement. Currently, we offer tiered incentives for targeted technologies, but the structure may be due for a recalibration. Customized projects often have long development and lead times. Changes introduced to the incentive design should be carefully considered and reviewed for unintended consequences. That said, several of the ideas presented here are interesting and will be studied for further inclusion in the programs.</p>
26	6-9, 6-10, 6-11, 6-12		<p>Use a comprehensive mix of program features and leverage an array of delivery channels to engage individual customers and encourage a long-term energy efficiency-based focus. Use a broad mix of program features and delivery channels to market projects and encourage deeper impacts over time. In addition to incentives, make appropriate use of education and marketing outreach opportunities, technical/design services, upstream incentives in the technology manufacturing and delivery chain, commissioning of advanced systems, and other relevant intervention and delivery strategies. Conduct market research and convene focus groups to identify and test an appropriate mix of customer outreach and delivery choices.</p>	All IOUs	Accepted	<p>PG&E - This recommendation is identical to one received in the 2010-12 Impact Evaluation; due to the short period of time between the final release of these studies, we restate our original position here: [Restate from 2010-12] PG&E - PG&E supports the implementation of sophisticated programs with a comprehensive mix of features including Workforce Education and Training, Mid-stream, and Upstream delivery mechanisms, Direct Install for select customer segments, and has been instituting these mechanisms for several years. PG&E is open to new ideas and is actively exploring ways to extend our reach and deliver savings in new ways.</p>

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Other	<p>SCE has incentives by end use type and provides targeted incentive rates for technology that either emerging or not widely adopted.</p> <p>SCE will take a payback floor under advisement, however payback is customer specific and therefore it is difficult to apply a broad policy to the wide scope of customers that are eligible to participate in the programs.</p> <p>Currently SCE offers a bonus for projects that are comprehensive. This applies to all customer not only first-time participants.</p>	Accepted	<p>SDG&E is continually looking to optimize its incentive payment structure and will use historic payment data to adjust its incentive payment structure as needed in the future. SDG&E has already implemented a comprehensive bonus structure to incent the desirable behavior discussed in the recommendation.</p>	Other	<p>SCG - Program design teams will take this under advisement. SCG is currently working to update their incentive design for Q1 2016.</p>
Accepted	<p>SCE offers a portfolio that leverages multiple delivery channels in support of long-term energy efficiency-based focus. We support customers and trade allies with education and technical assistance.</p>	Accepted	<p>SDG&E performs these recommendations as it standard</p>	Accepted	<p>SCG - SCG supports the design of sophisticated programs with a comprehensive mix of program features.</p>

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27	6-9, 6-10, 6-11, 6-12		More information is needed on industrial project costs, non-energy costs and benefits, net present value analysis, and associated participant cost-effectiveness analysis. There has been very little analysis conducted supporting the actual incremental cost of industrial and custom energy efficiency projects and further research is needed in this area. There is inadequate financial analysis conducted to determine what portion of the customer's financial investment threshold is associated with the energy savings of particular projects versus non-energy factors such as increases in production and reductions in labor, materials, and regulatory compliance costs. Increased financial analysis should be considered for inclusion in industrial project applications, especially for the projects with the largest incentives. A key reason for scrutinizing large incentive projects more fully is that the sheer size of such projects merits additional analyses as part of the project justification. Increased review of project financials inclusive of non-energy factors can also help to reduce free ridership.	All IOUs	Accepted	PG&E - We agree that additional information and analysis around incremental costs are needed. We feel this needs to be addressed in two ways: 1) through more comprehensive EM&V studies around incremental costs as a function of the measure, the location, the industry, etc, and 2) through additional training and messaging around how to generate and collect incremental costs. We are exploring additional services and/or quality control checks for large incentive projects to more accurately collect and calculate costs on a project.
28	6-13, 6-14	For three of the PAs the PPA assessment found limited evidence of improvement in PA performance in the 2013+ period relative to pre-2013. SDG&E was an exception. Although the sample size was limited for SDG&E for the 2013+ period, consisting of just 9 points, SDG&E performance improved. For the other PAs the appearance is that this is still a new process, and PAs may have not yet disseminated relevant guidance throughout their organizations. The 2013 PPA results, combined with GRR and NTGR findings, provide a solid baseline from which to continue tracking PA performance.	It is recommended that a statewide document, similar to the PPA form, be developed for use by all PAs for custom claims. The PPA forms developed by the evaluation team provide a very structured and methodical way of examining energy efficiency measure claims. The PAs go through a similar process but in a less systematic way, and improvements to forms and processes should have a positive outcome on results. The evaluation team believes that this approach will help PAs improve their GRRs and documentation, especially through more careful consideration of first-order factors affecting project eligibility and project baselines.	Multiple IOUs (specified in recommendation)	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects. A checklist has been created which will systematically check for key issues and processes for custom projects and ensure that all relevant documentation is included.

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Accepted	SCE will collaborate with statewide teams to discuss information needs and consider the costs of additional requirements.	Other	SDG&E believes that this is a shared responsibility between the CPUC and the PA's with regards to commercial costs. SDG&E would support any effort that would improved the reported costs for the projects identified. SDG&E has not historically delved into a customers financial drivers beyond simple payback.	Accepted	SCG - SCG will collaborate with statewide teams to discuss information needs.
Other	SCE has developed a new Project Feasibility Template and a new technical review form, which will be included for each project to improve project documentation in alignment with CPUC data requirements. In addition, our implementers and reviewers will use our QC checklist to ensure that the documentation is complete. Much of the information from the PPA form should be captured in the new documenation.	Accepted	SDG&E would support a SW fields claims document. More discussion is needed to determine the appropriate fields that would be included.	Accepted	SCG - SCG will collaborate with statewide teams to discuss approach and SCG welcome any new additional insight the PPA form can provide. SCG made modification of the procedures and processes were made to produce a more thorough process to verify exisiting conditions and production hours. A significant revision of the review process was done in October 1, 2014.

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29	6-14, 6-15	<p>The evaluation identified projects with eligibility issues including those related to baseline selection.</p> <p>The large majority of measures in the 2013 evaluation were "routine" and thus required minimal documentation. The PAs typically documented their "non-routine" measures quite well, but the CPUC and the PAs should improve upon the definition of "routine" measures used in this evaluation so that PAs can focus eligibility screening on non-routine measures</p>	<p>The PA's project eligibility treatment suggests that the PA's communication and coordination efforts with entities responsible for implementing CPUC guidance should be increased.</p>	ED-Recommendations for IOUs to collaborate or work with ED on something	Accepted	<p>PG&E - A new team, focused on custom implementation, was created to focus on standardization of custom programs within the portfolio. Communication of all CPUC guidance with all custom stakeholders will be a key area of focus for this team.</p>
30	6-14, 6-15		<p>The requirement that measures exceed the ISP / code baseline is a first order consideration for project eligibility. As such, it is important that the PAs spend adequate time documenting the appropriate project type and project baseline when establishing eligibility.</p>	All IOUs	Accepted	<p>PG&E - While exceeding ISP/code is a "first order consideration" and a given for implementing EE projects, determining what the ISP is or the applicability of the code is for a given measure is much less clear cut. For example, ISP is only a snapshot in time and does change from year to year. For some exotic applications, an ISP may not even exist. When to use a building code as an ISP is similarly unclear.</p> <p>We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the applicable baseline. Project type and baseline assumption is documented with every project and will continue to be.</p>

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Accepted	We have multiple forums to communicate information. Separate meetings with reviewers and implementers on a quarterly basis, policy documents (EPPICS) distributed to internal/external stakeholders, weekly reviewer meetings, 1 on 1 quality control review result feedback with multiple companies, etc. We will continue to improve our communication of the latest information.	Accepted	SDG&E has a concentrated effort to review these processes and welcomes additional CPUC Ex Ante Staff involvement.	Accepted	SCG - SCG works collabollaterly with CPUC to enure that communicationa and coordination efforts comply with CPUC guidance.
Accepted	When project ISP documentation is insufficient we have asked reviewers not to approve the projects until additional ISP justification is provided from project developers. The 3 hour training referenced above will also improve our quality in this area. SCE has implemented several project quality improvement efforts. In particular, a project narrative is required for high impact projects. The purpose the narrative is to summarize key customer and project opportunity details that demonstrate the influence and development of the project. Through this process, projects that do not support either influence or estimated savings, are excluded from the program participation process.	Accepted	This subject is under discussion and should be decided by year-end.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify exisiting conditions and production hours. A significant revision of the review process was done in October 1, 2014.

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31	6-16	<p>EUL documentation is maintained in less than 50 percent of custom application files. Where directly relevant, such as for ER claims, RUL is generally not documented in custom application files. Where directly relevant, incremental cost is only documented in custom application files about 40 percent of the time.</p> <p>The EUL should always be recorded in the in the post-installation inspection report. For ER measure RULs, neither the tracking system nor project application files were typically populated. RUL values for ER measures should always be populated in order to accurately assess savings in dual baseline situations.</p> <p>Incremental cost values for applicable measures were especially deficient and were populated only for 45 of 104 measures (43 percent). For cost effectiveness purposes, incremental cost values must be populated and clearly documented for all ER, ROB, NR, NC, and capacity expansion projects.</p>	<p>Better ex-ante documentation is needed supporting these and other important project parameters. The trend for needed improvement in this area is true for each of the IOUs, except for the most recent SDG&E trends noted above. For the 2013+ period SDG&E documentation supporting key project conclusions, parameters, inputs and assumptions improved significantly.</p>	Multiple IOUs (specified in recommendation)	Accepted	<p>PG&E - EUL values have historically not been maintained in project application files; they have been reported via lookup tables. We are considering a fix to have them reported in the project files as requested.</p> <p>While we report all incremental cost values on the back end, we will be issuing cost collection guidance to our front-end custom stakeholders.</p> <p>We fully agree with this recommendation and are actively implementing corrective actions, such as the project checklist, adoption of Energy Insight (our CRM solution), creation of the custom implementation team, and trainings slated for 2016. All of these items should better the collection of ex ante documentation.</p>
32	3-22, 3-23	<p>Consistent with 2010-2012 custom evaluation results, changes in operating conditions represent the single greatest cause for evaluation-based reduction to ex-ante saving claims. Some variation and change is normally expected between the pre-installation and post-installation periods; however, there are additional steps the PAs and implementers can take to improve ex-ante savings estimates.</p> <p>The recommendations to the right are a few suggestions and considerations from the evaluation engineers to help address these issues, categorized by operating condition.</p>	<p>Same M&V, Load Profile Change: Verify that savings calculations are based on actual occupancy schedules and reflect the post-installation conditions accurately. Identify any changes to system operating pressures, temperatures, or flows, and adjust the savings models to the new operating conditions after ensuring that measure operation and production levels are stable (E30095, G30010).</p>	All IOUs	Accepted	<p>PG&E - We do use the "actual occupancy schedules" and adjust savings calculations based on results found in the post-field inspection. However, the post-field inspection only represents conditions at a snapshot in time; the "actual occupancy schedules" can and do change over the course of time. We only claim savings based on conditions discovered ex ante; we cannot and do not project savings based on conditions that we speculate will be found ex post. Further, for lighting measures, we are currently required by ED Ex Ante to use DEER building hours for any lighting measure in a DEER building, regardless of actual or reported hours of operation of the measure.</p> <p>We agree with the spirit of the recommendation though and are strategizing on how we might maximize persistence to better align ex post conditions with those found ex ante; one example might be to conduct a formal follow-up several months after project completion.</p>
33	3-22, 3-23	<p>Consistent with 2010-2012 custom evaluation results, changes in operating conditions represent the single greatest cause for evaluation-based reduction to ex-ante saving claims. Some variation and change is normally expected between the pre-installation and post-installation periods; however, there are additional steps the PAs and implementers can take to improve ex-ante savings estimates.</p> <p>The recommendations to the right are a few suggestions and considerations from the evaluation engineers to help address these issues, categorized by operating condition.</p>	<p>Same M&V, Load Profile Change: Ensure that the correct data are used to develop efficiency profiles in regression models; if data are adjusted later, then document what changed and why. Avoid high polynomial curve fits with low R2 values. DOE Superior Energy Performance (SEP) M&V protocols require an R2 value of not less than 0.5 for model testing, with a p-value ranging from 0.1 to 0.2 (H30060).</p>	All IOUs	Other	<p>PG&E - We typically do not develop regression models as a part of the savings claim due to the administrative costs involved. As previously mentioned, we recommend a study on the program costs of M&V to compare the increased accuracy of additional M&V with the administrative costs of performing that M&V.</p>

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Accepted	"these and other parameters"? We report this information through the OLT. For Third Party; In 2015, the PFS standardization initiative was executed to improve the Project Feasibility Study document and overall project quality for SCE Third Party Pay-for-Performance programs. Standardizing the PFS Template allows implementers the ability to systematically capture program and technical reporting parameters (such as EUL/RUL, installation type, IMC, etc.) and facilitates a more comprehensive project review at all levels (Contract Manager> Tech Reviewer > CS Staff).	Accepted	SDG&E continues to work with the Ex Ante Staff and endeavors to improve our ratings.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014.
Other	Recommended activity is beyond the traditional scope of the new construction program projects. Potentially delaying incentive payment to allow for occupancy and building ramp up is often not practical for the customers, who commonly rely on the incentives to fund the projects and may not be able to afford the extended wait period. Nonetheless our new construction program has incorporated CPUC guidance regarding default schedules. As a result we are now aiming to capture data from the customer reflecting site specific conditions, trued up at installation verification, while still within customer program engagement period.	Accepted	SDG&E is placing additional requirements on post installation conditions particularly when M&V is involved.	Accepted	SCG - As of April 1, 2015, SCG has various levels of review of calculation parameters based on the size of the project for all projects through the Post-Installation review process.
Accepted	SCE will work with Energy Division to ensure our models adhere to DOE protocols for model fitting.	Other	SDG&E would prefer to use higher polynomial curves when the data is better defined by such curves.	Accepted	SCG - SCG will work with the internal teams to avoid high polynomial curve fits with low R2 values.

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34	3-22, 3-23		<p>Same M&V, Load Profile Change: For pump efficiency improvement projects, use actual pump efficiency tests, not estimates. For projects entailing weather sensitive measures, verify that the correct weather files are used in the analysis.</p>	All IOUs	Accepted	<p>PG&E - We do use actual pump efficiency tests in some subprograms, like APEP. In other cases, we do not typically conduct pump efficiency tests due to time and cost constraints. We will continue to work with the CPUC and custom project stakeholders to establish cost effective levels of M&V for each size of project.</p> <p>We do normalize for weather and will continue to do so. Correct weather files are verified in the enhanced QA/QC process we recently instituted.</p>
35	3-22, 3-23		<p>Ex-post M&V Period Different (Longer Term): The PAs should consider longer-term pre- and post-installation M&V activities and true-up the savings estimates to reflect current and representative measure operation. Additionally, the PAs should use trend data over a longer time duration to better characterize key parameters in order to perform a fair comparison of pre- and post-installation energy usage/demand (E30014, F30005, F30601, G30003, G30004, G30015, H30006).</p>	All IOUs	Accepted	<p>PG&E - We typically propose an M&V period and detail the length in the M&V plan submitted pre-installation. We try to true-up after steady-state operations, although "steady-state" can and does change over the course of time.</p> <p>However, we also recognize the need to balance the accuracy of the energy savings claim with timely customer incentive payments. Customers who have been properly influenced by the program and its incentives (i.e. non-freeriders) cannot afford to defer the incentive payment for months while M&V is conducted.</p>
36	3-22, 3-23		<p>Ex-post M&V Period Different (Longer Term): Adjust calculations for the post-installation discharge pressure, pump depths and fluid levels. Use a period longer than two weeks during post-retrofit M&V in conjunction with SCADA data, and the use of more conservative assumptions for pre-installation energy metrics. Also, use non-static efficiencies for pumps and motors reflecting load changes (F30028, F30049).</p>	All IOUs	Accepted	<p>PG&E - We do adjust calculations for post-installation discharge pressure, pump depths, and fluid levels. This is a consideration on the QA/QC checklist that we recently implemented.</p> <p>If SCADA data is available, we typically use spot measurement to verify its accuracy. However, to minimize administrative costs, we generally do not conduct our own M&V to verify the SCADA data. We do use conservative assumptions in all calculations and will continue to do so.</p> <p>We do not typically conduct pump efficiency tests due to time and cost constraints. We will continue to work with the CPUC and custom project stakeholders to establish cost effective levels of M&V for each size of project.</p>
37	3-22, 3-23		<p>Production Change: Before submitting the final savings, the PAs should normalize for production fluctuations between pre- and post-installation periods (F30007, F30018, F30601).</p>	All IOUs	Accepted	<p>PG&E - We do normalize for production fluctuations and will continue to do so.</p>

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Accepted	The energy advisor program is planning to perform more post-installation pump tests so that more projects include both a pre and post test in the documentation. We will continue to verify correct weather files are used in the analysis, if applicable.	Accepted	SDG&E is working to refine the pump testing efforts.	Accepted	SCG - SCG will use actual pump efficiency tests or deemed efficiency increase from 68% to 75% as a place holder until an IST verifies the pre and post pump efficiency.
Accepted	SCE applies varying levels of M&V depending on the energy or demand savings of custom projects with larger projects receiving greater levels of M&V. Since greater M&V is costly, SCE requires guidance on what are appropriate time limits for M&V and what measures are appropriate for such treatment. Similar guidance is required for the duration of trend data IOUs should capture since the cost of increased savings precision is delayed savings at the customer site if longer term preinstallation data is required.	Accepted	SDG&E makes every effort to comply with this. However, longer term M&V activities can lead to lower participation as there are customer impacts.	Other	SCG - In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement. SCG needs clarification on what a longer-term M&V activities entails. SCG's standard time period for its M&V activities is three months; However, there are instances where on a case-by-case basis there would be longer periods for its M&V activities. Also, SCG aligns this time period with the customer's operations.
Accepted	At the post installation phase when a pump test is performed, this approach is performed.	Accepted	SDG&E is working to refine the pump testing efforts.	Other	SCG - Not applicable.
Accepted	Based on the Calculations Guidelines document post production data is applied to the final calculations for the project.	Accepted	SDG&E makes every effort to comply with this for projects that involve M&V.	Other	SCG - In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement. SCG needs clarification on what a longer-term M&V activities entails. SCG's standard time period for its M&V activities is three months; However, there are instances where on a case-by-case basis there would be longer periods for its M&V activities. Also, SCG aligns this time period with the customer's operations.

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38	3-22, 3-23		Production Change: Collect longer periods of production data to determine typical post-project production levels (E30005, F30049).	All IOUs	Accepted	PG&E - We typically propose an M&V period and detail the length in the M&V plan submitted pre-installation. We do extend M&V periods depending on the variability in production levels.
39	3-22, 3-23		Changes in Operating Hours: Provide pre- and post-installation data supporting claims of annual operating hours (G30039).	All IOUs	Accepted	PG&E - We do this for projects claiming non-DEER hours; in the M&V plan we propose a methodology to determine operating hours.
40	3-22, 3-23, 3-24		Changes in Operating Hours: The PAs should use available SCADA/ EMS data to estimate operating hours, instead of facility shift hours (E30006).	All IOUs	Accepted	PG&E - If SCADA data is available, we typically use it to substantiate operating hours. If SCADA data is not available, we propose and conduct M&V. We no longer use unsubstantiated facility shift hours.

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Accepted	Per a Commission Staff mandate, Third Party Implementers collect a minimum of two weeks M&V data for each calculated project (lighting only projects may differ). For larger more complex projects, a minimum of three months M&V data can be obtained to provide ample data to back up post-project production/operating conditions. Recommended M&V periods for production data based on project size are suggested in our customized guidelines document.	Accepted	SDG&E makes every effort to comply with this for projects that involve M&V.	Other	SCG - In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement. SCG needs clarification on what a longer-term M&V activities entails. SCG's standard time period for its M&V activities is three months; However, there are instances where on a case-by-case basis there would be longer periods for its M&V activities. Also, SCG aligns this time period with the customer's operations.
Accepted	For lighting measures in DEER building types we believe this issue will go away now that we are using DEER operating hours. For the remaining measures we will look to our reviewers to confirm the latest operating hour information during the post installation inspection. For Third Party; Similar to the PFS standardization initiative that was executed to improve the Project Feasibility Study document and overall project quality for SCE Third Party Pay-for-Performance programs, the Installation Report will be standardized and will provide detail regarding any variation from the project scoping document (i.e. PFS, application), document reasons for reduced/increased energy savings, delineate the costing documents associated with the EEMs, and describe the rationale for variations in calculation methodology or data source.	Accepted	SDG&E attempts to adhere to DEER operating hours for a DEER building type.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014. SCG has continuously ensure the use of site-specific inputs when possible. Starting in 2014, assumptions reflects conservative values supported by strong evidence from secondary sources.
Accepted	Where possible, we obtain the latest SCADA/EMS schedules, or short term M&V in accordance with our customized guidelines document that is updated regularly. For Third Party; Similar to the PFS standardization initiative that was executed to improve the Project Feasibility Study document and overall project quality for SCE Third Party Pay-for-Performance programs, the Installation Report will be standardized and will provide detail regarding any variation from the project scoping document (i.e. PFS, application), document reasons for reduced/increased energy savings, delineate the costing documents associated with the EEMs, and describe the rationale for variations in calculation methodology or data source.	Accepted	SDG&E attempts to adhere to DEER operating hours for a DEER building type.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014. SCG has continuously ensure the use of site-specific inputs when possible. Starting in 2014, assumptions reflects conservative values supported by strong evidence from secondary sources.

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41	3-22, 3-23, 3-24		<p>Changes in Operating Hours: The PAs should be more conservative when estimating annual operating hours and wait for stable measure operation before completion of M&V and impact calculations, particularly if there is reason to believe the measure-operating schedule may change. Any updates can be easily captured at the time of the installation report review. This suggestion goes with other commercial SBD recommendations from evaluators that the eQUEST or EnergyPro simulation models be re-run after the building is commissioned, more completely occupied, and in steady state operation (E30004).</p>	All IOUs	Accepted	<p>PG&E - We do use conservative assumptions in all calculations and will continue to do so. We try to true-up after steady-state operations, although "steady-state" can and does change over the course of time.</p> <p>However, we also recognize the need to balance the accuracy of the energy savings claim with timely customer incentive payments. Customers who have been properly influenced by the program and its incentives (i.e. non-freeriders) cannot afford to defer the incentive payment for months while M&V is conducted. We look forward to working with the CPUC and custom project stakeholders as to what might constitute an appropriate M&V period.</p>
42	3-22, 3-23, 3-24		<p>Changes in Operating Hours: List operating hours for specific groups of equipment rather than using the facility operating hours in savings calculations (G30009).</p>	All IOUs	Accepted	<p>PG&E - If SCADA data is available, we typically use it to substantiate operating hours. If SCADA data is not available, we propose and conduct M&V. We no longer use unsubstantiated facility shift hours.</p>
43	3-22, 3-23, 3-24		<p>Changes in Operating Hours: Conduct due diligence to ascertain the annual operating profile of equipment serving variable loads, especially with respect to seasonal variation in production. Even short-term M&V will remedy incorrect assumptions of measure annual operating hours (G30019).</p>	All IOUs	Accepted	<p>PG&E - We typically propose an M&V period and detail the length in the M&V plan submitted pre-installation. We do extend M&V periods depending on the variability/seasonality in production levels.</p>

SCE		SDG&E		SCG	
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Other	<p>Recommended activity is beyond the traditional scope of the new construction program projects. Potentially delaying incentive payment to allow for occupancy and building ramp up is often not practical for the customers, who commonly rely on the incentives to fund the projects and may not be able to afford the extended wait period. Nonetheless our new construction program has incorporated CPUC guidance regarding default schedules. As a result we are now aiming to capture data from the customer reflecting site specific conditions, trued up at installation verification, while still within customer program engagement period.</p> <p>For Third Party; Per the Commission Staffs recommendation, Third Party Implementers collect a minimum of two weeks M&V data for each calculated project (lighting only projects may differ). For larger more complex projects, a minimum of three months M&V data can be obtained to provide ample data to back up post-project production/operating conditions. The Installation Report will be standardized and will provide detail regarding any variation from the project scoping document (i.e. PFS, application), document reasons for reduced/increased energy savings, delineate the costing documents associated with the EEMs, and describe the rationale for variations in calculation methodology or data source.</p>	Accepted	SDG&E attempts to adhere to DEER operating hours for a DEER building type.	Accepted	<p>SCG - SCG remains conservative when estimating annual operating hours and waits for stable measure operations before the start of M&V.</p> <p>SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014.</p> <p>SCG has continuously ensure the use of site-specific inputs when possible.</p> <p>Starting in 2014, assumptions reflects conservative values supported by strong evidence from secondary sources.</p>
Accepted	<p>This level of data granularity is not available for new construction projects, as it would need to be gathered after the building is fully operating and commissioned. This is beyond the scope of the new construction program. Potentially delaying incentive payment to allow for occupancy and building ramp up is often not practical for the customers, who commonly rely on the incentives to fund the projects and may not be able to afford the extended wait period. Nonetheless our new construction program has incorporated CPUC guidance regarding default schedules. As a result we are now aiming to capture data from the customer reflecting site specific conditions, trued up at installation verification, while still within customer program engagement period.</p> <p>For Third Party; Per a Commission Staff mandate, Third Party Implementers collect a minimum of two weeks M&V data for building systems/equipment within a defined project boundary. The standardized PFS template documents specific building system/equipment operating conditions. The Installation Report documents M&V data obtained to confirm post-project production/operating conditions.</p>	Accepted	SDG&E attempts to adhere to DEER operating hours for a DEER building type.	Accepted	<p>SCG - As its standard protocol, SCG utilizes operating hours for specific groups of equipment, not facility operating hours.</p> <p>SCG made modification of the procedures and processes were made to produce a more thorough process to verify existing conditions and production hours. A significant revision of the review process was done in October 1, 2014.</p> <p>SCG has continuously ensure the use of site-specific inputs when possible.</p> <p>Starting in 2014, assumptions reflects conservative values supported by strong evidence from secondary sources.</p>
Accepted	For Third Party; Per a Commission Staff mandate, Third Party Implementers collect a minimum of two weeks M&V data for building systems/equipment within a defined project boundary. The standardized PFS template documents specific system/equipment operating conditions. The Installation Report documents M&V data obtained to confirm post-project production/operating conditions.	Accepted	SDG&E attempts to adhere to DEER operating hours for a DEER building type.	Other	SCG - Program design teams will take this under advisement.

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44	3-22, 3-23, 3-24		No Post-Installation PA M&V, but Ex-post M&V Conducted: True-up savings based upon post-installation data, such as by calibrating the simulation model to utility usage data (E30068, G30131).	All IOUs	Accepted	PG&E - We typically calibrate models in pre-field, although we will continue to keep this an area of focus for custom project stakeholders.
45	3-24	Ex-Post Calculation Method Different from	Provide a fully workable savings model. Carefully detail how temperature reset changes will affect energy use. Compare as much post retrofit energy data as possible to adjust claim (E30088).	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the presence of a live, unlocked spreadsheet and/or model. We are training custom stakeholders on how to document existing conditions, including the effects of temperature reset changes. We are standardizing the collection of these existing conditions through Energy Insight. Finally, we establish a reasonable M&V plan and do adjust savings claims based on trend data.
46	3-24		Use standardized and/or approved calculation tools to determine savings for common measures such as boilers (E30161).	All IOUs	Accepted	PG&E - We have collaborated with the CPUC to integrate CPUC policy and guidance into the calculation methodology for one piece of modeling software, to foster transparency into the CPUC-required savings calculations and allow better standardization across custom projects using that software. We are exploring how to develop similar tools and ensure that all custom project stakeholders have access to these resources.
47	3-24	Errors Found in PA Calculation Model	Ensure that savings unrelated to the measure are not included in the ex-ante saving estimates (H30036).	All IOUs	Accepted	PG&E - We do not include savings unrelated to the measure in ex ante savings estimates, our enhance QA/QC process should instances of deviations from this policy.
48	3-24		Carefully consider all inputs and coincidence of peak kW; use any post-installation M&V power data, and compare the loads during peak summer time period of 2-5pm from June 1st through September 30th (or on the actual California climate zone three day period, if data was collected during the actual three day peak for that region). Never assume continuous operation when calculating kW demand impacts and instead, require site-specific evidence to support coincident peak demand savings (H30006, H30050, H30060).	All IOUs	Accepted	PG&E - We will be working to clarify the DEER peak kW savings calculation with custom project stakeholders.
49	3-24, 3-25		Check EnergyPro output files for large changes in peak demand that would suggest possible anomalies in the simulation results caused by thermal lag, which delays the onset of peak impacts by one hour resulting in very large differences between the simulated and calculated results (E30095).	All IOUs	Accepted	PG&E - We do not think it is prudent to tweak model inputs to adjust for anomalies; it would likely be overly burdensome for reviewers. We will offer guidance to modelers to use an appropriate tool for the application. Tools that we use to calculate savings will be posted to the CTA, and we will work to post a variety of tools that work for different applications.

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Accepted	Projects will continue to be trued up at the post installation phase per the inspections performed. QC checklist item # 16 states ... "For savings calculated using energy models, did the applicant state that the energy model was calibrated to existing kWh, kW, and therm usage or state why calibration was not performed?"	Other	Does not Apply	Accepted	SCG - Since Q1 2006, SCG has utilized true-up savings for large projects (>200,000 therms) through its M&V process. Recently, SCG has revised its post-installation procedures to include true-up for projects of all sizes.
Other	Recommended activity is beyond the scope of the new construction program projects. Potentially delaying incentive payment to allow for occupancy and building ramp up is often not practical for the customers, who commonly rely on the incentives to fund the projects and may not be able to afford the extended wait period. Nonetheless our new construction program has incorporated CPUC guidance regarding default schedules. As a result we are now aiming to capture data from the customer reflecting site specific conditions, trued up at installation verification, while still within customer program engagement period.	Other	Does not Apply	Other	SCG - Please clarify and provide more details on what the term "fully workable savings model" and "temperature reset" pertain to.
Accepted	We have provided a list of SCE preferred tools in our customized guidelines document and encourage our stakeholders to submit projects with them.	Other	Does not Apply	Accepted	SCG - SCG will continue its practices to use standardized and/or approved calculation tools. SCG agrees that they will provide their implementers/customers with the most current calculation tools. SCG works closely with CPUC to ensure that it's calculation tools meet CPUC standards.
Accepted	We will continue to train our reviewers to ensure that the models are trued up appropriately at the post install stage.	Other	SDG&E we understand the FSR comments and we will attempt to incorporate prospectively.	Accepted	SCG - SCG is working closely with CPUC's Ex Ante Review process to ensure programs adhere to CPUC policies.
Accepted	SCE currently utilizes this methodology to calculate peak kW. Sometimes equipment kW is constant when in operation which allows average kW to be equated to DEER peak KW (and we justify this with M&V data).	Accepted	SDG&E concurs with these findings and have taken steps to correct these aspects of various projects.	Other	SCG - Not applicable.
Other	Energy Pro is most commonly used in the Savings by Design program. Each model is reviewed by SCE technical staff to ensure the feasibility of the results.	Accepted	SDG&E believes we comply and we adhere to the accepted modeling standard approved by the CEC.	Other	SCG - Not applicable.

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50	3-25	Same Calculation Methods, Inputs and Assumptions Changed	Confirm and use actual equipment specifications instead of default efficiency levels whenever possible (E30361, G30097).	All IOUs	Accepted	PG&E - We do use actual equipment specifications instead of default values when available, unless directed to use default values (e.g. DEER).
51	3-25		Provide a clear description of the baseline, including references and documentation sources for all values used in the savings analysis and explain any discrepancies between initial and final measured values and savings estimates (G30039, H30131).	All IOUs	Accepted	PG&E - We will continue to keep this an area of focus and will work with custom project stakeholders to better document scope changes. This information is typically tabulated in Energy Insight, but we will be conducting further training to improve the quality of information that appears in the project files.
52	3-25		Use measure level data instead of building level data to isolate actual savings resulting from measures (H30014).	All IOUs	Accepted	PG&E - We typically do use measure level data instead of building level data, when available. Using DEER building hours for lighting measures in DEER buildings is a notable deviation, as directed by ED Ex Ante.
53	3-25		Take spot measurements for voltage, power factor (PF), and kW and not just amperage. In absence of measured data, include a reasonable PF when calculating motor power, preferably based on motor specifications or nameplate. The PF for a normal motor should be in the range of 0.75 to 0.85 (H30030, H30045).	All IOUs	Accepted	PG&E - SCADA data, which we use when possible to validate operating schedules, typically only collects amperage. We have instructed custom project stakeholders to take spot measurements on power for PF purposes.
54	3-25		Other: Use the most relevant data when developing load curves in addition to using specific climate-zone weather data (H30060).	All IOUs	Accepted	PG&E - We do use the most relevant data when developing load curves. We also normalize for weather and will continue to do so. Correct weather files are verified in the enhanced QA/QC process we recently instituted.
55	3-25		Incorrect Methods Used for Saving Normalization	For compressed air projects, use CFM to normalize energy savings not pressure or production hours.	All IOUs	Accepted

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Accepted	We request specification and product selection sheets and incorporate this data into models and calculations when available.	Accepted	SDG&E believes we comply with this request.	Accepted	SCG - SCG's standard protocol is to use measurement that is applicable, actual equipment specification. And SCG will continue to do so for all future projects. In 2006, SCG's larger projects (greater than 200k therms) are subjected to M&V review of the energy savings and continue to be subject to this requirement. As of April 1, 2015, SCG has various levels of review of calculation parameters based on the size of the project for all projects through the Post-Installation review process.
Accept	For Third Party; In 2015, the PFS standardization initiative was executed to improve the Project Feasibility Study document and overall project quality for SCE Third Party Pay-for-Performance programs. Standardizing the PFS Template allows implementers the ability to systematically capture program and technical reporting parameters (such as EUL/RUL, installation type, IMC, etc.) and facilitates a more comprehensive project review at all levels (Contract Manager> Tech Reviewer > CS Staff). the Installation Report will be standardized and will provide detail regarding any variation from the project scoping document (i.e. PFS, application), document reasons for reduced/increased energy savings, delineate the costing documents associated with the EEMs, and describe the rationale for variations in calculation methodology or data source.	Accepted	SDG&E has already taken steps to address these issues, particularly where M&V is concerned.	Accepted	SCG - SCG has implemented enhanced QA/QC elements related to customized projects to conform with CPUC baseline policies. And SCG will continue to do so for all future projects.
Accepted	For Third Party; Per a Commission Staff mandate, Third Party Implementers collect a minimum of two weeks M&V data to isolate actual measure level savings resulting from systems/equipment within a defined project boundary. The PFS template documents specific system/equipment operating conditions. The Installation Report documents M&V data obtained to confirm post-project production/operating conditions.	Other	Additional discussion with ExAnte and ExPost staff maybe warranted with regard to MBCx projects.	Other	SCG - Program design teams will take this under advisement.
Accepted	Third Party Implementers follow the methodology set by the International Performance Measurement & Verification Protocol. Specification of the metering points, period(s) of metering, meter characteristics, meter reading and witnessing protocol, meter commissioning procedure, routine calibration process and the method of dealing with lost data are all described in the Implementers M&V plan. Spot measurements for data other than amperage can be included as part of the M&V plan and should be determined on a case by case basis.	Other	For certain outlier projects SDG&E will consider taking power factor readings.	Other	SCG - Not applicable.
Accepted	We strive to use the most relevant data for each project based on the judgement of our third party technical reviewers.	Accepted	The BID program is no longer in existence and we are looking at the recommendations made.	Other	SCG - Not applicable.
Other	As a result of the new 2014 Compressed Air Guidelines, the number of claims for compressed air measures will reduce significantly in the portfolio so we will focus on improvement in other areas of this document.	Other	SDG&E requests additional project specifics due to no project data identification listed.	Other	SCG - SCG will work with internal teams to incorporate this recommendation when appropriate.

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56	3-25		Normalize for weather when applicable and verify operation of equipment with post-case trends (H30027).	All IOUs	Accepted	PG&E - We do normalize for weather and will continue to do so. Correct weather files are verified in the enhanced QA/QC process we recently instituted.
57	3-25		For all retrofit measures, it is important to normalize production data or weather between pre- and post-installation periods. Always match the time periods, if at all possible, for instance the first 7 weeks of 2013 compared with the first 7 weeks of 2014.	All IOUs	Accepted	PG&E - We do normalize for weather and production and will continue to do so. Both are verified in the enhanced QA/QC process we recently instituted.
58	3-25	No Savings Normalization Done	Ensure that M&V captures representative operating conditions and adjust for production levels, if possible (F30049, G30025, G30048).	All IOUs	Accepted	PG&E - We do normalize for weather and production and will continue to do so. Both are verified in the enhanced QA/QC process we recently instituted.
59	3-25	Inappropriate Baselines: Wrong ISP/code C	For all capacity expansion projects, a new ISP equipment baseline must be established that meets the post-installation operating and production capacities. In-situ equipment (unless it's above code or ISP) is an invalid baseline to calculate energy savings for NR, ROB, capacity expansion and NC projects (E30176).	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the applicable baseline.
60	3-25, 3-26		Do not allow RTO measure installations at manufacturers who service either automotive or aerospace industries. Recuperative units as baseline for other industries should be researched and ISP guidelines will need to be established based on current market trends (G30010, G30014).	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the applicable baseline. We will continue to pursue ISP studies when appropriate.
61	3-25, 3-26		When considering new high efficiency equipment, incentive applications should include quotes for available new, less efficient equipment (baseline) of the same functionality to support availability (G30028).	All IOUs	Accepted	PG&E - We do cost due diligence on larger projects. On smaller projects, we will typically use RS Means and DEER. In general, though, baseline costs are challenging and time consuming to procure. We look forward to working with the CPUC and custom project stakeholders on documentation of measure costs.

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Accepted	SCE currently performs normalization when applicable and will continue to do so.	Other	The BID program is no longer in existence and we are looking at the recommendations made.	Accepted	SCG - SCG's larger projects (greater than 200k therms) would be subject to M&V review and we would normalize for weather for these projects.
Accepted	SCE currently normalizing production data or weather between periods nad will continue to do so. Sometimes we are able to match time periods of M&V data when enough data is present.	Accepted	SDG&E performs these recommendations as its standard analysis procedure.	Accepted	SCG - SCG's larger projects (greater than 200k therms) would be subject to M&V review and we would normalize for weather for these projects. For production data, SCG would compare it between pre- and post-installation periods.
Accepted	SCE currently follows this approach and will continue to do so going forward.	Accepted	SDG&E makes every effort to perform this recommendation as its normal analysis process.	Accepted	SCG - SCG's standard protocol is ensure that M&V captures representative operating conditions and adjust for production levels. And SCG will continue to do so for all future projects. SCG made modification of the procedures and processes were made to produce a more thorough process to verify existings conditions and production hours. A significant revision of the review process was done in October 1, 2014. SCG has continuously ensure the use of site-specific inputs when possible.
Other	We have communicated throughout the company that capacity expansions must have a code or ISP baseline similar to ROB, normal replacement, and new construction.	Accepted	SDG&E requests that additional discussion occur between all IOU's and Commission with regard to the ISP data as opposed to best available data.	Accepted	SCG - SCG uses above code or ISP baseline to calculate energy savings for NR, ROB, capacity expansion and NC projects. SCG will continue to review and educate its customers on ISP studies and CPUC's guidance documentation as they become available to help better align the PA's baseline selection with CPUC's directives.
Rejected	We can apply any ISP guidelines, but we cannot exclude a customer segment from program participation without CPUC authorization.	Other	SDG&E has no comment lacking context.	Accepted	SCG - SCG will continue to follow CPUC guidance on fiberglass industry (e.g. automotive, aerospace). SCG will continue to review and educate its customers on ISP studies and CPUC's guidance documentation as they become available to help better align the PA's baseline selection with CPUC's directives.
Other	In new construction, it is important to consider that it is cost prohibitive and not practical for customers to get multiple quotes ahead of time. Disaggregation of individual measure costs is not practical and impossible in some cases. Nonetheless we are in the process of developing a means of gathering incremental costs and other supporting documents for projects, though not necessary cost quotes. For non new construction, our reviewers sometimes requests this information for specific projects. SCE will take this under consideration. It will be a best practice until the value is determined.	Other	SDG&E has no comment lacking context.	Accepted	SCG - In SCG's program package, SCG provides quotes for standard less efficient equipment to its customers for comparison purposes to evaluate performance, energy savings and capital expenditures.

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62	3-26	Inappropriate Baselines: ER Overturned to	Require all applications to include the remaining useful life (RUL) of the pre-existing equipment and carefully review the assumptions involved in the calculation of RUL for all early retirement applications (in general). Correctly classify project baseline based on condition of replaced equipment (E30600, F30003, G30006, H30034).	All IOUs	Accepted	PG&E - We are planning to implement an Early Retirement supplement that will require individual projects to meet all requirements for an Early Retirement savings claim, including the RUL of the existing equipment.
63	3-26		Conduct appropriate due diligence to insure that the current removed system would not be failing for an ER project (E30161).	All IOUs	Accepted	PG&E - We are planning to implement an Early Retirement supplement that will require individual projects to meet all requirements for an Early Retirement savings claim, including the RUL (which should be greater than one) of the existing equipment.
64	3-26		Other: The PAs should complete their assigned research, as directed from the CPUC EAR team, on the industrial boiler efficiency ISP baseline study. Until CPUC approval, use the minimum efficiency value of 82 percent (E30013, E30014).	All IOUs	Accepted	PG&E - We will continue to conduct relevant ISP studies. We do use standard efficiency values for boilers as directed.
65	3-26	Inappropriate Baselines: Regressive Baseline. For normal replacement measure retrofits, using an NC PA baseline study could be problematic in allowing a regressive baseline. Retrofitting with a measure that is of equivalent efficiency is not an energy efficiency action (G30016).	PAs should push their customers into incremental energy savings over non-regressive baseline equipment. For example, customers should use thicker or better insulating materials for pool covers than were previously in use at site. Otherwise the installation constitutes a like-for-like replacement, which is not considered to be an energy efficiency action (E30140).	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the applicable baseline and the existing conditions on site. This should ensure that both incremental savings and incremental costs are positive and nonzero for custom projects.
66	3-26, 5-4, 5-5	Table 5 2 shows that 31 measures were found to be ineligible in the pre-2013 period and seven measures in the 2013+ period across the four PAs. Mean appropriateness scores for ineligible measures range from 1.29 to 2.0 in the pre-2013 period and from 1.0 to 2.0 in the post period. Similarly, eligibility quality scores for these measures range from 1.43 to 2.75 in the pre-period and 1 to 2.25 in the post-period. It may be expected that all ineligible measures would receive quality and appropriateness scores of 1. However, quality scores may be greater than 1 if, for example, the PA	Ensure that electricity supplied is from the PA source and that tracking savings are zero for measures that do not affect the PA fuel source (Or consider not claiming such a measure at all) (E30006).	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the presence of any non-IOU fuel sources and corresponding calculation of savings per the Non-IOU Fuel Source guidance document.
67	3-26, 5-4, 5-5	satisfactory, but the PA assessment of eligibility based on that documentation was inappropriate. Appropriateness scores may be greater than 1 for an ineligible project due to several factors. For instance, there were cases where applicable CPUC guidance was issued only slightly in advance of the	The PAs should ensure that the installed measures exceed code/ISP baseline performance levels and do not entail like-for-like replacements, regressive baselines or reprogramming existing controls for RCx-type measures (E30161, G30016, G30046, H30009, H30029).	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the applicable baseline and the existing conditions on site. This should ensure that both incremental savings and incremental costs are positive and nonzero for custom projects.

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Accepted	Early retirement projects are allowed to use two methods to claim RUL. Either the RUL based on an the existing equipment life, or RUL = EUL / 3 method.	Accepted	SDG&E BID program is no longer offered. Additional efforts have since been in place to validate comments in this FSR.	Accepted	SCG - SCG made modification of the procedures and processes were made to produce a more thorough PA review of the Final Status Reports (FSRs). A significant revision of the process was done to address the FSRs in October 1, 2014. Since that time, SCG includes the remaining useful life (RUL) on all applicable measure types including all early retirement applications. Thus, project baselines are identified and therefore classified correctly.
Accepted	We are requiring our developers to complete and early retirement consideration checklist to ensure that projects claiming early retirement qualify	Other	SDG&E has no comment lacking context.	Accepted	SCG - SCG continues to conduct appropriate due diligence. SCG is working closely with CPUC's Ex Ante Review process to ensure programs adhere to CPUC policies.
Other	Boilers are not a common measure at SCE	Other	SDG&E has no comment, SDG&E currently relays on Title-24 code.	Accepted	SCG - SCG adheres to the minimum efficiency value of 82 percent. SCG is working closely with CPUC's Ex Ante Review process to ensure programs adhere to CPUC policies.
Accepted	SCE engineering group has been socializing the ineligibility of "like for like" measures with third party reviewers and will continue to do so going forward. We are also reminding customers that early retirement measure installations must be above code.	Other	SDG&E has no comment, SDG&E concurs and does not allow regressive baseline.	Accepted	SCG - SCG encourages its customers into incremental energy savings over non-regressive baseline equipment.
Accepted	Our QC checklist requires that all project developers and reviewers state if onsite generation is present at the site or is not applicable. This is the first step to determine if adjustments to the claimed savings are needed. After determining this, we will apply the calculation methodology that will be forthcoming in the CPUC non-IOU fuel sources guidance document going forward.	Other	SDG&E is currently following our interpretation of the DRAFT guidance which was released by Commission staff.	Other	SCG - Not applicable
Accepted	SCE engineering group has begun socializing the ineligibility of "like for like" measures with third party reviewers and will continue to do so going forward. When project ISP documentation is insufficient we have asked reviewers not to approve the projects until additional ISP justification is provided from project developers. The current REA discussions related to RCx will help shape the measures that are offered in the RCx program moving forward.	Other	SDG&E would disagree with the comments with regard to project H30009 because there is no reason to expect that the customer would not have replaced in like kind and we believe the program induced a higher efficiency. As for H30029, SDG&E does agree that additional documentation would have provided more clarity.	Other	SCG - Program design teams will take this under advisement.

						PG&E	
Item #	Page	Findings	Best Practice / Recommendations	Recommendation Recipient	Disposition (Accepted, Rejected, or Other)	Disposition Notes (e.g. Description of specific program change or Reason for rejection or Under further review)	
68	3-27, 5-4, 5-5	customer agreement, likely leaving inadequate time for the PA to address all relevant and active applications. Table 5 2 also presents the ex-post conclusions for why measures were determined to be ineligible. While a variety of reasons for ineligibility were cited, the majority of ineligible projects were due to CPUC guidance, requirement that measures exceed code/ISP baseline, and previous EAR guidance. Additional detail on eligibility considerations can be found in Appendix E.	Clearly document the energy efficiency action that is being performed. Provide nameplate details of pre-retrofit ESP and post-retrofit ESP, along with electrical & mechanical specifications. Ensure conformance with ISP guidelines (F30014, F30024).	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is the applicable baseline. Both a text description and pictures are provided with many custom projects, both of which help to document and describe the energy efficiency project implemented.	
69	3-27		Ensure that the installed measures meet progra	All IOUs	Accepted	PG&E - We are in the process of implementing an enhanced QA/QC review process for custom projects - one of these checks is compliance with all program rules, including payback requirements.	

SCE		SDG&E		SCG	
Disposition (Accepted, Rejected, or Other)	Disposition Notes (e.g. Description of specific program change or Reason for rejection or Under further review)	Disposition (Accepted, Rejected, or Other)	Disposition Notes (e.g. Description of specific program change or Reason for rejection or Under further review)	Disposition (Accepted, Rejected, or Other)	Disposition Notes (e.g. Description of specific program change or Reason for rejection or Under further review)
Accepted	(Programs to confirm) We have removed our high efficiency ESP solution code from our measure offerings. For Third Party; nameplate data is obtain whenever possible and electrical and mechanical specifications are provided if applicable.	Other	In general SDG&E concurs that additional documentation for our projects maybe warranted.	Other	SCG - Not applicable
Other	SCE does not have stated program payback requirements. SCE believes strongly that payback requirements are considered as a customer driven decision point for financial investment and vary specific to the customer's needs.	Other	Being that this is a third party implemented program and since 2013 SDG&E has taken a more active role in participating in program oversight.	Other	SCG - SCG does not have a formal payback requirements but SCG does look at it on a case-by-case basis. Customers' decisions to engage in a particular project is dependent on many variables in addition to simple payback, including but not limited to hurdle rates, internal rates of return, return rates of competing projects, limited capital project budget/resources.