

PUBLIC UTILITIES COMMISSION

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Date: July 30, 2018

To: Pacific Gas and Electric Company (PG&E)

From: Peter Lai, Commission staff

Cc: R.12-01-005 and R.13-11-005 Service Lists

Subject: Mid-year Feedback- 2018 Efficiency Savings and Performance Incentive (ESPI) Ex Ante Review

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Pursuant to Decision (D).13-09-023, D.15-10-028 and D.16-08-019, California Public Utilities Commission (Commission) staff and consultants are providing mid-year feedback on the program administrators' (PA) respective ex ante activities as of June 30, 2018. The mid-year feedback focuses on specific issues and concerns identified as part of ongoing workpaper and custom project ex ante reviews. This feedback will help the PA address these issues for the remaining year.

I. Commission Staff Findings 2018 Midyear Ex Ante Activities Feedback

The following sections of this memorandum provide a description of the findings, including areas of achievement and areas requiring improvement for both custom projects and workpapers review activities.

A. Custom Projects Review Overview

1. Summary of 2018 Midyear Achievements

PG&E continues to demonstrate efforts to improve its performance. Commission staff's observations include:

- PG&E staff continues to collaborate, hold productive discussions to clarify various Commission staff guidance. For example PG&E initiated discussions on the correct measure type for failed economizers on HVAC units and on how to apply the 2014 State wide compressed air guidelines.
- PG&E staff initiates discussion on projects it is reviewing to seek guidance and input from Commission staff. Examples include the discussions for the chiller plant controls project (PG&E ID No. PRJ – 00962729) and the fire roaster project (PG&E ID No: 1440.2-16-3861).
- PG&E staff initiates discussion on developmental projects it is reviewing to seek guidance and feedback from Commission staff. Early reviews mitigate finding project deficiencies later after customer expectations are set. PG&E staff engaged in thoughtful discussions with Commission Staff on how the use Database of Energy Efficiency Resource (DEER) to analyze the savings impacts for custom chiller projects.
- PG&E staff has taken a leadership role in the development of Statewide Industry Standard Practice guidelines update, a Track 2 Working Group Task 5 activity.
- PG&E staff made a good effort to provide data requested by Commission staff related to the statewide project (CPUC Project ID No. 0118).
- PG&E staff requested guidance from Commission Staff on implementing recent direction in LED workpaper dispositions that also applied to custom projects.
- PG&E staff continues its efforts to update its Resource Savings Rulebook to inform market actors of the regulatory guidance necessary to design and deliver successful programs.

2. Summary of Areas Requiring Improvement

Areas in need of improvement include similar concerns that Commission staff has highlighted in prior years:

- For the systematic errors in the EnergyPro™ calculation tool, PG&E must take more care to review the results provided by the tool and not rely only on vendors or other agency's reviews to ensure the accuracy of the tool. Additionally, PG&E should respond quickly to complying with Commission staff disposition and communicating to the program implementation staff and customers of the systematic errors.

- PG&E should readily have project ID information available to verify claims data on Modified Lighting Calculator lighting projects.
- PG&E should take more care to review calculation methodology and analysis approaches as discussed in Project 0174 below.
- PG&E should take more care in the development and review of measurement and verification plans as discussed in Projects 0174 and X363 below.
- PG&E must take more care to collect evidence of program influence in project documentation as January 1, 2018 all portfolio goals are based on net savings impacts.
- PG&E should commit to working with the other program administrators and prioritizing the development of statewide standardized documentation and processes for custom projects is required.

B. Deemed Workpapers Review Overview

1. Summary of Achievements

PG&E continues to demonstrate efforts to improve its performance. Commission Staff's observations include:

- PG&E proactively responded to Phase 1 disposition for LED lighting including investing significant staff time to work with the Commission staff consultant team to address the primary concerns of the dispositions for interior and exterior LED fixtures.
- PG&E is undertaking independent research in key areas to understand rapidly changing standard practice in response to discussions with Commission staff.
- During the in-person meeting covering the 2017 annual memo, PG&E's management staff in attendance noted their ongoing commitment to improving ESPI performance. PG&E's continued efforts to collaborate with staff to resolve workpaper dispositions demonstrates this commitment.
- Commission staff are aware that all four PAs are now collaborating to develop statewide consolidated standardized documentation and processes for several deemed measures / work papers. Commission staff applauds this effort and expect that it will result in improved Statewide portfolio performance in the coming years.

2. Summary of Areas of Improvement

Commission staff encourages PG&E to review the 2017 annual ESPI memo and continue to focus on improvements noted in that memo. Commission staff also highlights the following additional recommendations for improvement:

- PG&E should review assumption used in Database of Energy Efficiency Resource (DEER) for package HVAC savings estimates and ensure that non-DEER measures incorporate the same assumptions and methods where applicable.
- PG&E should improve response time in implementing standard practice studies so that deemed measure baselines can be updated in a more timely manner.
- PG&E should improve coordination with other PAs in developing the consolidated workpaper plan and include more detail about the basis and schedule for workpaper revisions.
- PG&E should improve its efforts to examine code changes, such as lighting and water heating, and update workpapers to reflect baseline and rating methods changes.

II. Discussion

A. Custom Projects Ex Ante Review

Commission staff issued only a few PG&E dispositions during the first six months of 2018 and no new PG&E projects were selected for review during this period. Most of the custom projects review activities were focused on meetings between PG&E and Commission staff where various ongoing projects and policy issues were discussed. The Commission is in the process of selecting a new contractor to assist staff with the custom projects ex ante review and expects an increase in ex ante review activity to occur starting in the fourth quarter of 2018.

1. Issues Related to Gross Savings Impacts

As highlighted in the 2016 and 2017 ESPI memoranda, calculation methodologies and M&V plans continue to be an area of weakness that has a significant impact on the reliability of the ex ante savings estimates. In 2017 Commission staff selected two Savings by Design projects, CPUC Project ID numbers 0163 and 0164, which used the EnergyPro™ for their savings impact analysis. The ex ante review determined that the EnergyPro™ tool is flawed. It became evident that PG&E and the statewide team for this program had not vetted this tool before using it in this program. Commission staff and staff consultants had 2 meetings in early 2018 with the statewide utility staff and the software developer. However, as of June 30, 2018, of the 22 issues originally identified, seven have been adequately corrected, and six have been partially corrected. Nine remaining issues are still outstanding.

When accepting analysis tools for use in estimating savings for custom projects, utility staff must take more care to review the results provided by the tool and not rely only on vendors or other agency's reviews to ensure the accuracy of the tool under the range of uses expected in the PA programs. Commission staff also note that many of the errors identified in the dispositions are user input errors in the EnergyPro™ software. User input errors are a sign that the software users may not have the expertise to perform the modelling and that the PG&E technical reviewers may not have the expertise to review the simulation models created by the implementation teams. Additionally, PG&E was aware in December 2017 of the errors in the Energy Pro tool therefore should have stopped using the tool to estimate savings for new projects and followed Commission Decision 15-10-028 Section 3.2.3.4 direction on grandfathering of impacted pipeline projects.

For CPUC ID number 0174 which is a complex HVAC project, Commission staff were disappointed that neither PG&E nor the project implementer were able to provide a credible calculation methodology or M&V plan. For CPUC ID X363 which included guest room controls at a large hotel, Commission staff found that the M&V analysis lacked credibility and that the claimed ex ante savings impacts for the measure could not be verified by a billing analysis when adjusted for weather and occupancy. Commission staff worked with PG&E and made a significant reduction in the approved ex ante savings values for this project. Moving forward, the PA must normalize the analysis with the appropriate conditions.

In CPUC ID number 0009 (336 Modified Lighting Calculator lighting projects), PG&E staff requested Commission staff to remove these projects from the projects tracking as these projects were all paid and claimed in prior years. However, PG&E staff is unable to demonstrate that it has followed the Commission staff's disposition direction to correct the claimed savings for these projects. As of June 30, 2018, Commission staff and PG&E staff are still working on clarifying whether PG&E staff followed disposition directions on these projects.

As described above, not providing a complete and concise description of a calculation methodology and the inability to provide an accurate savings estimate remains a weakness. PG&E must undertake a long-term and ongoing effort to increase the technical skills of its project developers and Quality Assurance/Quality Control (QA/QC) reviewers to ensure that the ex ante savings estimates are accurate and reliable.

2. Process, Policy, Program Rules

During one of the monthly meetings, Commission staff noted that PG&E's bi-monthly project lists for review selection do not include any information about the Energy Upgrade California (EUC) program projects. Commission staff are concerned because the analysis tool used for this program was previously found to be significantly overestimating savings impacts for these projects. Commission staff pointed out that PG&E is required to provide information for the EUC projects on the bi-monthly project list for review selection. PG&E must give more scrutiny to this program to ensure the reliability of the ex ante savings impacts.

3. Documentation Issues

In the first six months of 2018 documentation issues were not significant. Commission Staff note again that no new projects were selected for ex ante review in this timeframe and documentation issues for ongoing projects under review in this period have been previously resolved.

4. Issues Related to Net Impacts

Commission staff continue to be concerned about issues related to net savings impacts since as of January 1, 2018 all portfolio goals are based on net savings impacts. Commission staff have observed that PG&E is making a diligent effort in this area and encourage PG&E to persist in its efforts. For each project, PG&E should provide documentation that demonstrates what the customer was planning to do prior to the energy efficiency program intervened in the project. The documentation needs to demonstrate how the program enabled the customer to adopt an alternative action that improves final efficiency and provides incremental savings benefits to ratepayers over what the customer was otherwise planning to implement.

Net Impacts should be based on real and convincing evidence of program influence included in the documentation submitted for every project. The evidence of program influence should outweigh evidence that suggests the customer would have chosen the efficient alternative absent the program information or financial support. It is important that PG&E make significant progress in reducing free ridership to meet the portfolio net savings goals.

5. Contracting issue- Third-Party Implementer Contract Structure:

The 2016 and 2017 ESPI memoranda noted several issues with third party contracts including some projects that seemed to have unexpectedly large performance payment rates, a lack of meaningful third-party performance payment caps, and a contract structure based solely on first year claimed gross savings impacts with no consideration for net impacts. Pursuit of large performance payments can create an environment in which implementers maximize the ex ante savings estimates at the expense of compliance with Commission policy, appropriate and accurate assessment of program influence, measure eligibility or classification and savings impacts. The upcoming third-party contract solicitation must address these issues.

6. Potential Reviewer-Program Implementer Conflicts of Interest Issue:

The 2015, 2016 and 2017 ESPI review memoranda expressed concern that some third-party implementer firms also perform technical review of program applications. Commission staff expressed this several times to PG&E staff, as well as to other PA staff, in meetings that a conflict of interest exists for several of PG&E's technical review contractors that are also third-party implementers. While Commission staff understand that implementers do not in most cases review projects which their firm is also implementing, there is an inherent conflict related to being on the both the enforcement and user side of rules and policies that has contributed to the lack of progress on many of the issues discussed above. PG&E still has not informed Commission staff what actions have or will be taken to address and mitigate this problem.

B. Deemed Workpapers Ex Ante Review

PG&E's deemed program continues at a similar pace compared to previous years. The deemed ex ante review included several Phase 1 workpapers which were included in dispositions published on March 1st, 2018. There were two Phase 2 reviews, with one of those reviews being a continuation of a Phase 2 review issued in September 2017. The comments below are organized by the 5 metric areas of scoring. A table of all submitted and reviewed workpapers, along with feedback of each reviewed workpaper, is included in Attachment A Attachment A: Workpaper Feedback.

1. Timeliness

To date, PG&E generally has made timely submittals of lists, inventories, plans, studies, and workpaper disposition responses. For example, PG&E followed direction of the Phase 1 disposition for LED Screw-in Lamps and submitted revised workpapers in a timely fashion. PG&E also collaborated with Commission staff on several lighting workpaper groups (screw-in lamps, exterior fixtures and interior high/low bay fixtures) and devoted staff resources so that workpapers could all be revised in time for approval and incorporated into programs by the deadlines directed in the initial dispositions.

While one of PG&E's strengths is their attention to lighting workpapers and related timely submissions, other areas where Commission staff was expecting updates were notably absent from PG&E's Phase 1 submissions. For example, Federal regulations require residential and small commercial water heaters to be rated under a revised testing and reporting standard as of December 2017. Commission staff was expecting revised workpapers to be submitted as part of Phase 1 that reflected these code changes. Instead, Commission staff had to issue a uniform disposition covering all PAs' water heating workpapers, regardless of whether revisions were submitted as part of Phase 1.

PAs are responsible for updating workpapers for code changes and where changes in DEER would cause changes in non-DEER measures. PAs with SCE as the lead, have been submitting a consolidated workpaper plan that includes, for a subset of currently active workpapers, the workpaper lead PA and anticipated submission dates of revisions. At this time, this workpaper plan contains little information about the underlying reasons for updating workpapers or carrying them over into an upcoming program year without revisions. This makes it difficult for Commission staff to form a complete picture of the timeliness of PG&E's Phase 1 submissions. Commission staff recommends adding a brief analysis to

the consolidated workpaper plan that summarizes, for each workpaper any code changes, previous direction from Commission staff, Commission decisions or resolutions, DEER revisions and EM&V findings that would necessitate Phase 1 workpaper revisions.

2. Content, Completeness, and Quality of Submissions

For some workpapers, PG&E invested significant staff time to work with the Commission staff and staff consultants to address the primary concerns of Phase 1 and Phase 2 dispositions. For example, PG&E worked with Commission staff to develop an approach for both interior and exterior LED fixture savings that is tied to the overall fixture performance so that higher performing lamps having greater deemed savings. As a result, PG&E and Commission staff were able to develop an approach that became the accepted statewide savings method for 2018. Commission staff emphasizes that PG&E devoted significant staff and consultant resources to investigate different levels of LED fixture performance, develop interim technology cost methods and provide insight and background to Commission staff on current program designs and how the dispositions will affect future programs.

In other instances, the PG&E workpaper team has not consistently addressed technical concerns within Commission staff workpaper reviews. For example, Commission staff review of PG&E's workpaper covering for higher efficiency package HVAC equipment did not adequately incorporate DEER methods, nor did it adequately isolate the specific improvements over standard DEER measures. Furthermore, the workpaper did not adequately demonstrate that improvements in the measure technologies would be caused by the utility program and incentives.

3. Proactive Initiative of Collaboration

PG&E staff continue to provide advanced notice of efforts to seek out information, input and clarifications on its deemed measure workpaper development activities. This year PG&E has notified Commission staff of plans to develop early retirement lighting measures for incorporation into direct install delivery programs. PG&E has also been providing updates to staff, through meetings of the Lighting Program Coordination Group (PCG) on industry standard practice research for interior and exterior lighting.

4. PA's Due Diligence, Quality Assurance, and Quality Control

PG&E staff has been carrying out independent research regarding the energy savings of smart thermostats and presented its research results during 2017. PG&E recently submitted to Commission staff an update to its smart thermostat research including estimated second year savings experienced by study participants. Unfortunately, this research has not been used in the development of statewide savings values. Commission staff approval of SCE's workpaper that follows a different methodology developed by a primary vendor of smart thermostats, should not prevent more current information from being incorporated into savings estimations. Commission staff is not aware of any plans by the PAs to update the currently approved savings estimates included in the SCE workpaper. Nevertheless, Commission staff applaud PG&E's efforts to carry out independent research on these technologies.

5. PA's Responsiveness

Commission staff and staff consultants applaud PG&E's efforts to correctly and effectively reflect the on-going market transformation in LED lighting. PG&E has proactively started to remove linear fluorescent and HID fixture measures from program offerings. We encourage PG&E to take a leadership role to focus on inter-PA collaboration to improving timeliness and consistency of offerings updates across California to reflect market changes.

PG&E needs to demonstrate proactive portfolio adjustments that reflect recognized standard practice changes across all segments of the portfolio in a similar manner as has been done for screw-in lighting. For example, PG&E's work on other lighting technologies such as the LED High-Bay and Low-Bay Fixtures does not reflect previous Commission staff direction or PG&E staff's own expressed perspective demonstrated during the collaboration on the 2017 Phase 1 LED disposition and portfolio retirement of CFLs. The Commission staff noted a lack of consideration for the rapidly shifting standard practice baseline to LEDs. The workpaper also did not consider the wide variation in available LED fixture performance which Commission staff believes should result in greater estimated savings for higher performance fixtures. PG&E has embarked on a standard practice study, but this will likely not be completed until the 3rd quarter of 2018.

[Attachment A](#) contains the workpaper summary tables showing the qualitative components for each metric. Each reviewed workpaper was first determined to have components either applicable or not applicable to a metric. If an item was determined to have activity applicable to a metric, the item was then assigned a qualitative rating as to the level of due diligence applied to the item as either deficient (or "-"), apparent but minimal (or "yes"), or superior (or "+").

Questions or comments about the feedback should be directed to Peter Lai (peter.lai@cpuc.ca.gov). Note that pursuant to D.13-09-023, Commission staff will schedule a conference call with PG&E staff to discuss and answer clarifying questions of this memorandum.

Attachment A: Workpaper Feedback

The table below lists the ID numbers associated with each workpaper submission or disposition and the workpaper review process “score enhancements” scoring area. The listed weight is used in the combining all the individual rows together into a single score for all the rows in the two scoring components (“direct review” and “process issues”); then each category total score gets equal weighting in the final total score for the metric. The PA may refer to the individual dispositions for more detailed descriptions of the specific actions staff required for each workpaper. The qualitative ESPI scoring feedbacks are designated as follows:

- ‘+’ indicates a positive (from midpoint) scoring impact on a metric,
- ‘-’ indicates a negative (from midpoint) scoring impact on a metric,
- ‘Yes’ indicates meeting expectation; neutral (midpoint) scoring impact on a metric,
- ‘No’ indicates the review feedback is not applicable to a metric.

Workpaper Detailed Reviews				ESPI Metrics					
WP ID	Rev	Title	Comments	Weight	1	2	3	4	5
PGECOLTG178	3	LED High-Bay and Low-Bay Fixtures	Positive: PG&E submitted first version of workpaper in 2017, which allowed for review and update time. PG&E informed CPUC staff in late 2017 that the research directed in detailed review was delayed. Opportunities: There is a need for more thorough cost research that compares similar types of LED fixtures -- those that would be considered standard practice and those with superior efficiency that would be covered by incentives. ISP research is far behind schedule and is at risk of losing relevant due to recent changes in Title 24 that take effect 1/1/2020.		+	no	+	+	+
PGECOLTG151	8	LED Outdoor Street and Area Lighting	Positive: PG&E was proactive in proposing an ISP baseline that included LEDs and PG&E devoted significant additional resources to collaborate with the EAR team to develop an interim solution for 2018. PG&E's final workpapers were submitted in a timely manner so that revised interim values could be used by all PAs for Q1 2018 claims. Opportunities: PG&E pricing data showed only small differences in price between lesser efficient fluorescent and HID fixtures compared to LED fixtures, which supported a much higher percentage of LEDs in the ISP. However, pricing data also had shortcomings of using quantity one pricing from web scraped sources. EAR team concluded that significant additional cost research was needed and that an ISP study for interior lighting was needed.		+	no	+	+	+

Workpaper Detailed Reviews				ESPI Metrics					
WP ID	Rev	Title	Comments	Weight	1	2	3	4	5
PGECOHC174	0	Multiple Speed Unitary Air-Cooled Commercial Air	Positive: PG&E has provided regular updates on the development of the workpaper. Opportunities: Reviews have noted areas where: 1) savings are based on methods that are not consistent with DEER prescribed methods, 2) any performance of code minimum is considered part of the energy efficiency and does not consider what is typically available, 3) actual data and calculations are not provided so that EAR team can review the detailed development of the savings estimates.		+	-	+	-	no
PGECODHW104	6	Gas Water Heater	Opportunities: Starting 2018, residential and small commercial water heaters are required by Federal standards to be tested and rated with an Uniform Energy Factor (UEF). However, it appears that all IOU programs are still defining measures using the outdated Energy Factor (EF). As part of the Phase 1 disposition, CPUC staff developed measure definitions using UEF, but no workpapers have been submitted following this direction.		-	no	no	no	no
PGECODHW106	8	Electric Heat Pump Water Heater	See comment for PGECODHW104		-	no	no	no	no
PGECODHW122	2	Instantaneous Gas Hot Water Heater	See comment for PGECODHW104		-	no	no	no	no
PGECOLTG165	4	LED A-Lamps	Positive: PG&E has actively collaborated with CPUC staff to develop interim solutions for LED lamps, can retrofit kits and small fixtures that consider recent Title 20 revisions as well as the shift of LED lamp purchases to be a larger share of standard practice. PG&E submitted all workpapers revised pursuant to the Phase 1 disposition in a timely manner. Opportunities: Initial 2018 submissions did not consider that Title 20 requirements would generally prohibit the sale of incandescent A-lamps and MR-16 lamps in California on 1/1/2018.		-	no	+	no	no
PGECOLTG163	6	LED Candelabra	See comment on PGECOLTG165		-	no	+	no	no
PGECOLTG175	4	LED Residential Recessed Downlight	See comment on PGECOLTG165		-	no	+	no	no
PGECOLTG164	6	LED Globe	See comment on PGECOLTG165		-	no	+	no	no
PGECOLTG141	8	LED PAR Lamp	See comment on PGECOLTG165		-	no	+	no	no
PGECOLTG177	5	LED BR-R-Lamps	See comment on PGECOLTG165		-	no	+	no	no

Workpaper Detailed Reviews				ESPI Metrics					
WP ID	Rev	Title	Comments	Weight	1	2	3	4	5
PGECOLTG165	6	LED A-Lamps	Positive: PG&E worked with CPUC staff/EAR team toward understanding of requirements to develop savings values and program requirements for AR screw-in lamp measures. Opportunities: Initial workpaper did not properly define 1st baseline, 2nd baseline or RUL.		+	-	no	yes	yes
PGECOLTG177	6	LED BR-R-Lamps	See comment for PGECOLTG165.		+	-	no	yes	yes
PGECOAPP128	6	Retail Products Platform	Positive: PG&E continues to maintain this workpaper to update savings based on recent code and DEER updates. Opportunities: For new technologies (such as the dehumidifiers added to this workpaper) PG&E needs to make sure the baseline reflects what is typically being sold which is usually more efficient than the least efficient equipment allowed under applicable government standards. For this workpaper, PG&E did not include this analysis for dehumidifiers. PG&E dropped dehumidifiers from the revised workpaper submission, CPUC did not review the revised submission, and the workpaper now has interim approval.		+	-	no	no	no
PGECOPUM102	8	Residential Variable Speed Pool Pump	Positive: PG&E relies on lead workpaper developer so that ex ante values are consistent statewide. Opportunities: PG&E needs to ensure that the lead workpaper has been approved for use prior to submitting a short form workpaper. In this case, the lead SCE workpaper is not currently approved.		-	yes	no	no	no

Workpaper Submissions				ESPI Metrics					
WP ID	Rev	Title	Submission Status: EAR Team Comments	Weight	1	2	3	4	5
PGECODHW122	2	Instantaneous Gas Hot Water Heater	Detailed review – resubmit - scored in detailed review section						
PGECODHW104	6	Gas Water Heater	Detailed review – resubmit - scored in detailed review section						
PGECOLTG163	6	LED Candelabra	Detailed review – resubmit - scored in detailed review section						
PGECOLTG164	6	LEDGlobe	Detailed review – resubmit - scored in detailed review section						
PGECOLTG177	5	LEDBR-R-Lamps	Detailed review – resubmit - scored in detailed review section						
PGECOLTG175	4	LED Residential Recessed Downlight	Detailed review – resubmit - scored in detailed review section						
PGECOLTG141	8	LED PAR20, PAR30 and PAR38 Lamps	Detailed review – resubmit - scored in detailed review section						
PGECOLTG165	4	LED A-Lamps	Detailed review – resubmit - scored in detailed review section						
PGECOLTG178	3	LED High-Bay and Low-Bay Fixtures	Detailed review – resubmit - scored in detailed review section						
PGECOPUM106	0	Water Pump Upgrade	Review waived - interim approval						
PGECOAPP123	6	Ozone Laundry	Review waived - interim approval						
PGECOHVC172	0	Single Package Vertical Heat Pump	Review waived - interim approval						

Workpaper Submissions				ESPI Metrics					
WP ID	Rev	Title	Submission Status: EAR Team Comments	Weight	1	2	3	4	5
PGECOHV174	0	Multiple Speed Unitary Air-Cooled Commercial Air	Detailed review – resubmit - scored in detailed review section						
PGE3PAGR117	8	Agricultural Ventilation Fans	Review waived - interim approval						
PGECOHV167	1	Smart Thermostat	Review waived - interim approval						
PGE3PHVC151	3	Economizer Repair	Review waived - interim approval						
PGECOAGR121	0	Enhanced Specifications VFD on Ag Pumps	Review waived - interim approval						
PGECOALL100	8	Custom Measures	EAR team doesn't track this workpaper						
PGECOHV128	8	Commercial Air-cooled Unitary Air Conditioners and Heat Pumps >=65 kBtu/h	Review waived - interim approval						
PGECOAPP124	3	Energy Efficient Refrigerators	Review waived - interim approval						
PGECOLTG107	9	Residential Upstream Compact Fluorescent Lighting	Review waived - interim approval						
PGE3PREF120	4	Refrigeration Case SCT Control	Review waived - interim approval						
PGECOLTG151	8	LED Outdoor Lighting	Detailed review – resubmit - scored in detailed review section						
PGECOHV126	7	Commercial Air-cooled Unitary Air Conditioners and Heat Pumps <65 kBtu/h	Review waived - interim approval						
PGECOPUM102	8	Residential Variable Speed Pool Pump	Preliminary review – incomplete - scored in preliminary review section						
PGECOHV128	9	Unitary Air-Cooled Commercial Air Conditioners and Heat Pumps	Review waived - interim approval						
PGECOAPP128	4	Retail Products Platform	Review waived - interim approval		no	no	no	no	no
PGECOHV139	6	Residential HVAC Quality Maintenance (QM)	Review waived - interim approval		+	no	no	no	no
PGECOALL100	9	Custom Measures	EAR team doesn't track this workpaper						
PGECOAPP128	5	Retail Products Platform	Review waived - interim approval		+	no	no	no	no
PGECOHV120	7	Air-Cooled Chillers	Review waived - interim approval		+	no	no	no	no
PGECOHV106	5	Variable Frequency Drives (VFDs) for HVAC Fans	Review waived - interim approval		+	no	no	no	no
PGECOALL109	3	Energy Upgrade California	Review waived - interim approval		+	no	no	no	no
PGECODHW124	1	High efficiency DHW Boiler (>75 MBTU/hr)	Review waived – Interim approval		+	no	no	no	no

Workpaper Submissions				ESPI Metrics					
WP ID	Rev	Title	Submission Status: EAR Team Comments	Weight	1	2	3	4	5
PGECOPUM102	8	Residential Variable Speed Pool Pump	Preliminary review – incomplete - scored in preliminary review section						
PGECODHW106	7	Electric Heat Pump Water Heater	Review waived - interim approval		no	no	no	no	no
PGECODHW106	8	Electric Heat Pump Water Heater	Detailed review – resubmit - scored in detailed review section						
PGECOAPP127	3	Clothes Washers	Review waived - interim approval		no	no	no	no	no
PGECOAPP127	4	Clothes Washers	Review waived - interim approval		no	no	no	no	no
PGECOLTG179	5	LED Ambient Commercial Fixtures and Retrofit Kits	Review waived - interim approval		no	no	no	no	no
PGECOPUM106	1	Water Pump Upgrade	Review waived - interim approval		no	no	no	no	no
PGECOALL111	2	Tier 2 Audio Visual (AV) Advanced Power Strip	Review waived – Interim approval		no	no	no	no	no
PGECOALL111	3	Tier 2 Audio Visual (AV) Advanced Power Strip	Review waived – Interim approval		no	no	no	no	no
PGECOAPP128	6	Retail Products Platform	Preliminary review – incomplete - scored in preliminary review section						
PGECOPRO108	0	Pipe Insulation	Review waived – Interim approval		no	no	no	no	no
PGECOAPP128	6	Retail Products Platform	Review waived - interim approval		+	no	no	no	no
PGECOLTG151	8	LED Outdoor Street and Area Lighting	Detailed review – approved		+	no	no	no	no
PGECOLTG178	3	LED High-Bay and Low-Bay Fixtures	Detailed review – approved		+	no	no	no	no
PGE3PAGR113	2	Scroll Compressors	Review waived – Interim approval		no	no	no	no	no
PGE3PAGR115	2	CHR Unit - Electric and Gas	Review waived – Interim approval		no	no	no	no	no
PGE3PREF115	2	Glycol tank Insulation	Review waived – Interim approval		no	no	no	no	no
PGE3PREF126	2	ECM for Walk-In Evaporator with Fan Controller	Review waived – Interim approval		no	no	no	no	no
PGECOPRO108	1	Pipe Insulation	This workpaper provides an example of the confusing approach for establishing the lead PA for a statewide workpaper. PG&E appears to have retired their version of the workpaper (PGECOHVC104) and adopted SCG's version (WPSCGWP110812A) and assigned a new workpaper ID (PGECOPRO108). However, version 1 of this workpaper adds measures from the retired PG&E version, but keeps it as a short form workpaper. This workpaper should include all documentation needed to support measures that are not fully documented in the referenced SCG workpaper.		no	-	no	-	no
PGE3PMOT102	2	Enhanced Fan Time Delay BPM Motor	Review waived – Interim approval		no	no	no	no	no
PGECOPRO107	5	Boiler Tuneup for Drycleaners	Review waived – Interim approval		no	no	no	no	no
PGECOLTG140	7	MR16 Lamps	Expired by PA - This Workpaper may not be used						
PGECOLTG163	7	LED Candelabra	Review waived – Interim approval		+	no	no	no	no

Workpaper Submissions				ESPI Metrics					
WP ID	Rev	Title	Submission Status: EAR Team Comments	Weight	1	2	3	4	5
PGECOLTG175	5	LED Residential Recessed Downlight	Expired by PA - This Workpaper may not be used						
PGECOLTG164	7	LED Globe	Review waived – Interim approval		+	no	no	no	no
PGECOLTG141	9	LED PAR Lamp	Review waived – Interim approval		+	no	no	no	no
PGECOLTG177	6	LED BR-R-Lamps	Preliminary review – incomplete - partial approval for NR measures		+	yes	yes	yes	yes
PGECOLTG165	6	LED A-Lamps	Preliminary review – incomplete - partial approval for NR measures		+	yes	yes	yes	yes
PGECOLTG165	5	LED A-Lamps	Review waived – Interim approval		+	no	no	no	no
PGECODHW126	2	Demand Control for Centralized Water Heater Recirculation Pump	Review waived – Interim approval		no	no	no	no	no
PGECOFST129	0	Commercial Conveyor Broiler	Review waived – Interim approval		no	no	no	no	no
PGECODHW127	0	Laminar Flow Restrictors	Review waived – Interim approval		+	no	no	no	no
PGECOLTG165	6	LED A-Lamps	Review waived – Interim approval		+	no	no	no	no
PGECOLTG177	6	LED BR/R Lamps	Review waived – Interim approval		+	no	no	no	no