STATE OF CALIFORNIA

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PUBLIC UTILITIES COMMISSION

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Date: March 27, 2019

To: Pacific Gas and Electric (PG&E)

From: Peter Lai, CPUC

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

Subject: 2018 Efficiency Savings and Performance Incentive (ESPI) Performance Scores

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I. Summary of 2018 ESPI Scores- Custom Projects and Workpapers

Pursuant to Decision (D).13-09-023, D.15-10-028 and D16-08-019, Commission Staff and consultants score the investor owned utilities (IOUs) based on their performance during the pre-approval phase (or "ex ante" phase) of developing an energy efficiency project or measure. This performance score is a component of the annual Efficiency Savings and Performance Incentive (ESPI) awarded to each utility. Commission Staff and consultants completed the 2018 ESPI performance review scoring as prescribed in Table 3 of D.16-08-019. Decision D.16-08-019 established consolidated metrics on which the utilities are evaluated. Ordering Paragraph 19 of this decision states that the ESPI scores "shall be weighted for the utility program administrators based on the proportion of deemed[1] savings and custom measures in each utility's portfolio". The scores contained in this memo are final, and Pacific Gas and Electric Company (PG&E) shall use the total final performance points from the table below together with the weighting[2] for each category to calculate the 2018 ESPI performance review component award.

A breakdown of PG&E's 2018 ESPI performance score of 75.77/100 for workpapers[3] and custom projects is shown below in Table 1. PG&E's 2018 total points increased over its 2017 total points of 67.59. Scores for 2017 are provided in Table 2 below.

Table 1: 2018 ESPI Scoring for Workpapers and Custom Projects

PG&E 2018 ESPI Performance Scores and Points		Workpapers				Custom			
Metric	Metric Area of Scoring	2018 Metric Score	Metric Weight Factor	2018 Points	Max Points	2018 Metric Score	Metric Weight Factor	2018 Points	Max Points
1	Timing and Timeliness of Submittals	2.04	10%	2.04	5	2.50	10%	2.50	5
2	Content, Completeness, and Quality of Submittals	1.50	30%	4.50	15	4.00	30%	12.00	15
3	Proactive Initiative of Collaboration	5.00	10%	5.00	5	4.73	10%	4.73	5
4	Due Diligence and Quality Assurance/Quality Control Effectiveness	3.00	25%	7.50	12.5	5.00	25%	12.50	12.5
5	Responsiveness to Needs for Process and Program Improvements	5.00	25%	12.50	12.5	5.00	25%	12.50	12.5
Total				**31.54**	**50**			**44.23**	**50**

Table 2: 2017 ESPI Scoring for Workpapers and Custom Projects

PG&E 2017 ESPI Performance Scores and Points		Workpapers				Custom			
Metric	Metric Area of Scoring	2017 Metric Score	Metric Weight Factor	2017 Points	Max Points	2017 Metric Score	Metric Weight Factor	2017 Points	Max Points
1	Timing and Timeliness of Submittals	5.00	10%	5.00	5	2.45	10%	2.45	5
2	Content, Completeness, and Quality of Submittals	2.81	30%	8.43	15	1.71	30%	5.13	15
3	Proactive Initiative of Collaboration	5.00	10%	5.00	5	4.00	10%	4.00	5
4	Due Diligence and Quality Assurance/Quality Control Effectiveness	3.13	25%	7.83	12.5	4.67	25%	11.68	12.5
5	Responsiveness to Needs for Process and Program Improvements	2.95	25%	7.38	12.5	4.28	25%	10.70	12.5
Total				**33.63**	**50**			**33.96**	**50**

The metric scoring area descriptions are expanded in Attachment A. The final category scores are

[1] Deemed savings are a set of predetermined savings values for efficiency measures that are developed from commonly accepted data sources and analytical methods.

[2] D16-08-019 Ordering Paragraph 19 specifies that "Energy Savings Performance Incentive scores shall be weighted for the utility program administrators based on the proportion of deemed savings and custom measures in each utility's portfolio." Therefore, the final score cannot be determined until the utilities have submitted and Commission staff has compiled their final 2018 savings claims and published for each utility the weights for the custom and deemed categories.

[3] A workpaper documents the data, methodologies, and rational used to develop values for deemed measures. A workpaper is prepared and submitted by program administrators and approved by the CPUC.

explained in more detail below as well as in Attachments B through D to this memo. As required by the ESPI decision D. 13-09-023, the relative weighting of performance during custom project development versus workpaper (or "deemed") development of the performance component of the ESPI will be published by Commission Staff in June 2019 after reviewing the utilities' final 2018 savings claims to be filed on May 1, 2019.

II. Commission Staff Findings 2018 Activities

A. Custom Projects Review Overview

1. Summary of 2018 Achievements

In 2018, Commission Staff issued two custom project dispositions and six review waivers[4]. A review of the two projects disposition and the Review Process Score Enhancements points resulted in PG&E's custom project score increasing by 10.27 points over 2017 scores (33.96 in 2017 vs. 44.23 in 2018). PG&E continues to demonstrate efforts to improve its performance. Commission Staff's observations include:

- PG&E staff took a leadership role in the development of Statewide Industry Standard Practice guidelines update, a Track 2 Working Group Task 5 activity. PG&E staff served as the statewide utilities lead assisting Commission Staff to facilitate the working group discussions, solicit and incorporate, where appropriate, stakeholders' recommendations, and deliver on time the draft guidance document for Commission Staff to issue for stakeholders' comments.
- 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 Statewide compressed air guidelines, requested Commission Staff's review and feedback on its updated Retro-Commissioning Guidance document, and solicited Commission Staff feedback on a proposed training session on the development and implementation of M&V plans.
- PG&E staff initiated discussions on project reviews to seek guidance and input from Commission Staff. Examples include discussions on the chiller plant controls project (PG&E ID No. PRJ – 00962729), the fire roaster project (PG&E ID No: 1440.2-16-3861) and a refinery project.
- PG&E staff initiated discussions on developmental project reviews to seek guidance and feedback from Commission Staff. Early reviews mitigate finding project deficiencies later after customer expectations are set. The discussions included program influence, potential to-code measures, and on proposed projects including cooling tower, waste heat recovery, wind tunnel, and automation controls.
- PG&E staff engaged in thoughtful discussions with Commission Staff on how the use Database of Energy Efficient Resources (DEER) to analyze the impacts resulting from custom chiller projects.
- PG&E staff made a good effort to provide data requested by Commission Staff related to a statewide process heating project (CPUC Project ID No. 0118).
- PG&E staff requested guidance from Commission Staff regarding implementing recent direction in LED workpaper dispositions that also applied to custom projects.

[4] Review waivers are issued where Commission staff have not conducted an in-depth review of all of the submitted project documentation. CPUC staff neither approves nor disapproves any aspects of the project. The project application is directed to proceed without further Commission staff review.

- PG&E staff continued its efforts to update its Resource Savings Rulebook and to provide training 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:

- 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 decrease the time needed to comply with Commission Staff dispositions and to communicate to program implementation staff and customers regarding the systematic errors.
- PG&E should readily have project ID information available to verify claims data used within Modified Lighting Calculator lighting projects (PGE-15-T-C -0009), because lack of project ID information results in the inability to verify final claimed savings.
- PG&E should ensure that large projects, such as Projects 0174 and X363, have a credible calculation methodology and M&V plan in place prior to project approval so that the final M&V results are based on a well thought-out and agreed upon methodology that aligns with initial stipulated savings estimates.
- PG&E did not include Energy Upgrade California Advanced Home Upgrade Program projects in the twice-monthly projects list submissions as required. The exclusion of these projects does not allow the CPUC to verify that PG&E is reviewing these projects as needed to ensure that the software is being used correctly.
- Net savings affect energy efficiency portfolio goals; therefore, PG&E should collect evidence of program influence that demonstrates net savings in project documentation.
- PG&E should commit to working with the statewide utilities and prioritizing the development of statewide-standardized documentation and processes for custom projects.

B. Workpapers Review Overview

PG&E's workpapers scores have declined slightly compared to last year by 2.90 points from 33.63 in 2017 to 31.54 in 2018.

1. Summary of 2018 Achievements

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

- PG&E's Resource Savings Rulebook is a very useful tool for all program administrators and Commission Staff to provide guidance on pre-approval, forecasted savings claims. We hope it becomes the basis of a statewide rulebook.
- PG&E proactively responded to Phase 1[5] disposition for LED lighting including investing their staff time to work with the Commission Staff consultant team to address the primary concerns of the dispositions for interior and exterior LED fixtures. The work included an improved revamping from a watts to lumens performance standard.
- PG&E is undertaking independent research in key lighting and smart thermostat areas to

[5] Phase 1 is updated workpapers affected by DEER resolution or for new workpapers to be included in the 2019 and 2020 program year. Phase 2 is new workpapers or workpaper revisions due to non-DEER/resolution changes.

understand rapidly changing standard practices 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 Commission Staff to resolve workpaper dispositions demonstrates this commitment.
- PG&E, along with the other three IOUs, have collaborated to develop statewide-consolidated standardized documentation and processes for several deemed measures / workpapers, including the first statewide workpapers for food services.
- PG&E collaborated further with stakeholders to present two workpaper training sessions for third party contractors and is leading an effort to produce a statewide energy savings rulebook.

2. Summary of Areas of Improvement

Commission Staff also highlight the following additional recommendations for improvement:

- PG&E's lack of timely communication to its implementers, such as local government partners that contract with non-profit organizations, last year about upcoming lighting dispositions and subsequent drop in savings highlighted a gap in the IOUs communication and outreach. To mitigate PG&E's lack of an effective communication effort resulted in Commission Staff extending lighting disposition's effective date beyond its original intent.
- PG&E needs to take a leadership role and demonstrate strong commitment to effectively and timely communicate to their advisors who can meaningfully engage with the implementer community changes that effect deemed savings estimates. PG&Es hesitancy to communicate information to implementers is posing a barrier to creative solutions on effective and timely communication with the market stakeholders.
- 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 research studies so that workpapers can be updated with less disruption to the market. The delayed cost submission of the commercial lighting workpapers required the CPUC to issue last minute extension.
- 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.

III. Discussion

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

A. Custom Projects Performance Review

Each year, Commission Staff reviews a selected sample of custom project energy efficiency program applications. The review findings and directions to the IOUs are presented in documents referred to as "dispositions". Commission Staff acknowledges that the project applications are not selected at random, rather selected based upon the type of projects that had past issues or projects where the CPUC expected to find deficiencies for various reasons. Projects were also selected to determine whether a utility has corrected issues from similar projects that Commission Staff reviews identified in the past.

In 2018, Commission Staff issued two PG&E dispositions and selected no new PG&E projects for review. Commission Staff also issued five project review waivers. Most of the custom project review activities were focused on meetings between PG&E and Commission Staff where various ongoing projects and policy issues were discussed.

The CPUC has selected a new contractor to assist staff with the custom projects review and expects more significant review activities to start in the second quarter of 2019.

1. Issues Related to Gross Savings Impacts

As highlighted in the 2018 mid-year ESPI memoranda, issued on July 30, 3018, calculation methodologies and measurement and verification (M&V) plans continue to be an area of weakness that have a significant impact on the reliability of the pre-approval, forecasted savings estimates.

- In 2017, Commission Staff selected two Savings by Design projects (CPUC Project ID numbers 0163 and 0164) which used EnergyPro™ for their savings impact analysis. The pre-project review determined that the EnergyPro™ tool is flawed. It became evident that PG&E and the statewide IOU team for this program had not vetted this tool before using it for this program. Commission Staff and staff consultants had 2 meetings in early 2018 with the statewide utility staff and the software developer. Of the 22 issues originally identified, seven have been adequately corrected, six have been partially corrected, and nine are still outstanding. When utilizing analysis tools to estimate savings for custom projects, utility staff must take more care to review the tool's results and not rely on vendor or other agency's reviews to ensure the accuracy of the results for the range of uses expected within the IOU's program. 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 EnergyPro™ tool and thus should have stopped using the tool to estimate savings for new projects. Instead they should have followed the direction given in CPUC Decision 15-10-028 Section 3.2.3.4 on grandfathering of impacted pipeline projects.
- Initial savings estimates for CPUC Project ID number 0174, a complex HVAC project, were based on stipulated savings and were estimated to be very large (800,00 kWh annually). Commission Staff was disappointed that the bulk of the implementer's payments were scheduled to made based on these stipulated savings estimates prior to conducting post-installation savings analysis. Additionally, neither PG&E nor the project implementer were able to provide a credible calculation methodology or M&V plan.
- For CPUC Project ID X363, which included guest room controls at a large hotel, Commission Staff found that the M&V analysis lacked credibility, because it did not for changes in savings resulting related to occupancy status which varied significantly by time of year. The claimed pre-approval, forecasted 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 pre-approval, forecasted savings values for this project. Moving forward, the IOU must make sure to normalize the analysis for the appropriate conditions.
- For CPUC Project 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 of the custom gross savings impacts process. 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 pre-approval, forecasted 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 pre-approval, forecasted 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 pre-approval, forecasted review in 2018 and documentation issues for ongoing projects under review in this period have been previously resolved.

4. Issues Related to Net 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 continue to provide documentation that demonstrates what the customer was planning to do prior to the energy efficiency program intervening 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. 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.

B. Workpapers Performance Review

PG&E submitted 83 workpapers for deemed measures in 2018 providing parameters to estimate the potential energy savings for energy efficient measures. 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 CAttachment C: Workpaper Scores and Feedback.

1. Timeliness

There is inconsistency in PG&E's submittals of lists, inventories, plans, studies, and workpaper disposition responses. While PG&E submitted workpaper and workpaper revisions in response to DEER2019 updates meeting the January 1, 2019 due date, it has lagged in its efforts to follow past

Commission dispositions that required study updates. PG&E also submitted seven workpapers with DEER2019 updates late in December for retroactive application to the beginning of 2018, adding unnecessary time pressures to Commission Staff to accommodate the late change.

For example, PG&E followed direction of the Phase 1[6] workpaper 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), however, the cost research was not completed in a timely fashion, delaying workpaper submission, requiring the CPUC to issue an extension to avoid a market disruption. This has factored into both individual workpaper scoring and the process assessments.

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 2018 Phase 1 workpaper 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 IOUs' water heating workpapers, regardless of whether revisions were submitted as part of Phase 1.

2. Content, Completeness, and Quality of Submissions

In the first half of 2018, Commission Staff notes that PG&E devoted significant staff and IOU 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. PG&E recognized that the current framework of sorting fixtures by wattages was not adequate and proceeded to revamp the sorting by lumens. This performance-based approach is appropriate. However, the work was not completed in the proposed timeframe requiring an extension of the existing workpaper. Since the workpapers were not submitted in 2018, they cannot be scored. While, the review of the related workpapers is not complete at this time, this contribution is reflected in the individual workpaper scores.

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 high 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 continued to provide advanced notice of efforts to seek out information, input and clarifications on their deemed measure workpaper development activities. In 2018 PG&E notified Commission Staff of plans to develop early retirement lighting measures for incorporation into direct install delivery programs. PG&E also provided updates to staff, through meetings of the Lighting Program Coordination Group (PCG), on industry standard practice research for interior

[6] Phase 1 is updated workpapers affected by DEER resolution or for new workpapers to be included in the 2019 and 2020 program year. Phase 2 is new workpapers or workpaper revisions due to non-DEER/resolution changes.

and exterior lighting.

PG&E has collaborated with other IOUs and the CPUC, which is reflected in the process score. PG&E collaborated with the other IOUs and the CPUC to present two successful workpaper training sessions in November 2018 geared to third party contractor bidders. PG&E has been helpful to Commission Staff as it transitions to a new workpaper consultant. Some of the additional assistance has included providing estimates of individual workpaper contributions to portfolio savings and providing a list of high priority measures.

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

PG&E staff has been carrying out independent research, particularly earlier in 2018, regarding the energy savings of smart thermostats and presented its research results during 2018 and Commission Staff encourages applaud PG&E's efforts to carry out independent research on various technologies. This contribution is reflected in individual workpaper scores.

5. IOU'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. PG&E has taken leadership focusing on inter-IOU collaboration for commercial lighting products to ensure workpapers reflect market changes, which is reflected in individual workpaper scores.

PG&E has also authored the "PG&E Resource Savings Rulebook" (Rulebook), originally a PG&E specific Rule Book, now being adapted to a statewide document. This is a valuable and well put together description of the California energy efficiency framework and has been reflected in the process score.

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. The Commission Staff noted a lack of consideration for the rapidly shifting standard practice baseline to LEDs. The workpaper for exterior lighting 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 completed a standard practice study for exterior lighting in 4th quarter of 2018.

IOUs are responsible for updating workpapers for code changes and where changes to values for technologies in DEER would cause changes to value assumptions for technologies not included in DEER. As the statewide IOU lead, SCE has been gathering data from the other IOUs to create the consolidated workpaper plan. PG&E submitted the appropriate data to SCE for compilation. The IOUs have supplemented the workpaper plan with additional information since the mid-year ESPI report, with flags indicating a variety of conditions. While there is room for additional improvements in the next submission plan, the workpaper plan was useful to Commission Staff. The IOUs also added estimates of the workpaper's contribution of savings as a later addition to the consolidated workpaper plan. This contribution has been acknowledged in the process score.

PG&E needs to demonstrate its commitment to stakeholder communication. Lack of transparency and communication gap with Rising Sun resulted in unintended consequence of extending lighting

savings beyond the initial intent of the Commission Staff's disposition. Complaints from non-profit organizations working with PG&E's local government partners blind-sided Commission Staff due to a communication failure at PG&E's program administration level. The stakeholders were not aware on codes and standards update and recent disposition guidance reducing energy savings, which is a program administrative role. PG&E cites challenges and bottlenecks in communicating information to its implementers following issuance of staff dispositions without providing solutions to address communication gaps with stakeholders. This deficit is reflected in the process score.

IV. The Scoring Methodology

The 2018 performance score was developed using 5 detailed scoring metrics for each directly reviewed work product (i.e., workpaper and custom project), as well as a scoring of the utility's internal due diligence processes, QA/QC procedures and methods, as well as program implementation enhancements to support improved forecasted values.

Attachment A summarizes the Metrics adopted in D.16-08-019 as well as the Commission Staff developed scores and points for 2018. D.16-08-019 also directed that the custom and workpaper scores be weighted together into a final score based on the IOU total claims for custom and deemed activities, respectively. The weights for custom and deemed scores will be developed and published by Commission Staff in June 2019 based upon the IOUs final 2018 savings claims to be filed on May 1, 2019.

In accordance with D.16-08-019, the IOUs' activities are assessed against a set of five metrics on a rating scale of 1 to 5. Once activities are assessed, the ratings for each are converted onto this scale, where 1 is the lowest score assigned and 5 is the highest score assigned. A maximum score on all metrics for both workpapers and custom projects will yield 100 points whereas a minimum score on all metrics would yield 20 points. The 1-5 rating scale is distinguished as follows:

1. Consistent underperformer in meeting the basic expectations;
2. Makes a minimal effort to meet Commission expectations but needs dramatic improvement;
3. Makes effort to meet Commission expectations, however improvement is required;
4. Sometimes exceeds Commission expectations while some improvement is expected; and
5. Consistently exceeds Commission expectations.

As with the 2017 performance scores, the final scores were "built-up" from a metric-by-metric assessment of each reviewed work product. It is Commission Staff's expectation that this detailed scoring approach, along with the detailed qualitative workpaper and custom project level feedback, is consistent with the direction provided in D.16-08-019. We believe this scoring approach provides specific guidance to the utilities on how to improve their due diligence review and scores moving forward.

A "Direct Work Product Review" portion of each metric score was developed based upon the individual scoring of dispositions issued for custom project or workpapers. Each reviewed utility work product was first determined to have components either applicable or not applicable to a metric[7]. If a metric was

[7] For example, workpapers and custom projects which do not involve measures which in some way are expected to utilize

determined to be not applicable to a given disposition, the metric was identified as not applicable ("N/A") and the metric was assigned a score equal to the average 1 to 5 score from the remaining applicable metrics. Assigning this average score to any "N/A" metrics essentially normalized the final score so that a disposition neither benefitted or was penalized as a result of a non-applicable metric.

For workpapers, 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 "+"). Each of the qualitative ratings were then mapped to a quantitative score percentage level of 0%, 50% and 100%, respectively. The assigned percentage scores were averaged across all the reviewed items. Individual workpaper level disposition scoring, as well as related workpaper activities, are provided in Attachment C.

For custom projects, each applicable metric was directly scored using the 1 to 5 rating scale described above. A project by project summary of the custom project scoring is included in Attachment B.

The above process resulted in custom project and workpaper work product review scores. Next, utility-specific "Review Process Score Enhancements" were developed for each applicable metric based on observed policy and technical reviews or program implementation processes/procedures developed and implemented in 2018 in order to positively impact future project reviews. Commission Staff believes it is important to provide ESPI "Enhancement" points for positive due diligence developments to recognize the effort and to provide additional encouragement even before a change in project-level results is observed.

In the custom scoring process Commission Staff added "Enhancement" points in the area of Policy/Technical QA/QC for Metrics 1, 3, 4 and 5 to reflect PG&E staff's positive efforts in these metric areas as discussed earlier. Those initiatives included:

- PG&E taking a leadership role working with Commission Staff to develop the Industry Standard Practice Guide updates.
- Ongoing commitment of PG&E's management to improve the performance of PG&E's portfolio as evidenced by its efforts such as:
    - Updates to the Resource Savings Rulebook to inform market actors of the regulatory guidance necessary to design and deliver successful programs.
    - Continued enhancement of knowledge sharing with stakeholders via their Wiki. In 2018 it was opened to third parties and expanded to include more project development resources. PG&E also created informational videos, newsletters, announcements and process flow diagrams. PG&E had over 150 stakeholders participate in tailored trainings.
- PG&E staff initiated thoughtful discussions on developmental projects it was reviewing to seek early guidance and feedback from Commission Staff. Early reviews mitigate finding project deficiencies later after customer expectations are set.
- PG&E implemented the Early Review Process to decrease project review turnaround times and mitigate customer and/or project developer frustration (for example learning of a project fatal error or issue after extensive resources have been spent developing the project). PG&E's analysis of the early reviews in 2018 found that of the total 22 projects that underwent early reviews, 3

DEER values, assumptions or methods, in the development of new kWh, kW and therm savings values would not receive scoring for metric 9 ("Professional care and expertise in the use and application of adopted DEER values and DEER methods"). Another example would be a minor workpaper or small custom project may not receive a score for metric 4 ("Efforts to bring high profile, high impact, or existing (with data gaps) projects and/or measures to Commission staff in the formative stage for collaboration or input").

were rejected, 18 required revision and resubmittal, and one was moved to another program.

- PG&E staff created the Energy Insight (EI) Database to document project lifecycles, to improve custom project turnaround time, and to develop KPIs for stakeholders. PG&E analyzes data in this database to evaluate project application and review success annually. This analysis found PG&E withdrew or rejected 391 projects from the custom project pipeline in 2018 (mostly during the project development phase) as it no longer qualified and/or moved to another program.
- PG&E developed standardized Technical Review Templates for all project reviewers to use to provide uniform and complete project reviews that meet all policy and program requirements. PG&E also developed standardized Project Development Templates for all project developers to encourage uniformity of project reports and calculations to assist in generating more complete projects.

Although these efforts may not yet be reflected in project specific disposition scores, Commission Staff believes recognition of the efforts of PG&E's technical and policy review staff is warranted. These activities offer promise to improve the overall PG&E performance in the future.

Workpaper scores also include "Review Process Score Enhancements." Process issues represent critical deemed measure development topics where Commission Staff believes improvement is needed or improvement has occurred, but those activities are not necessarily reflected in the areas of direct review. These activities, as discussed above, are noted in the narrative, but include items such as:

- PG&E authored the "PG&E Resource Savings Rulebook" (Rulebook), originally a PG&E specific Rule Book, which is now being adapted to a statewide document. This is a valuable and well put together description of the California energy efficiency framework.
- PG&E collaborated with the other IOUs and the CPUC to present two successful workpaper training sessions in November 2018 geared to third party contractor bidders.

To produce the final workpaper scores, the metric scores for the two workpaper contributing areas were added together, using a 50% weight for the process issues score. The 50% weight given to the process review has the effect of being a "score enhancement" or increase to the direct review score. Furthermore, within each contributing area (direct and process review areas), Commission Staff also assigned weights for individual items as a way to reflect greater importance of different individual review items. The separate process scoring provides an avenue for assessing overall QA/QC processes and procedures put into place by PG&E.[8]

Attachment D contains custom and workpaper summary tables showing the components and total scores and points for each metric in each of the two component areas of scoring described above.

Questions or comments about the feedback or final scores should be directed to Peter Lai (peter.lai@cpuc.ca.gov). Note that pursuant to D.13-09-023, Commission Staff will schedule a meeting

[8] The guidance on scoring approach provided in D.13-09-023, at 74, provides that when only a small number of submissions are available for scoring and the submissions have varying impacts on the portfolio overall, that appropriate weighting should be allied to the submission and observed performance that should carry across multiple metrics. "Low scores for metrics that assess specific and important quantities (e.g., if the utility only uploads a small percentage of custom projects and receives a low score for Metric 1a), will have a proportional impact on the total score the utility could receive for later metrics that measure the quality of custom project submittals." "For example, doing an outstanding job on a large number of very low-impact, standardized projects will not make up for doing a poor job on a few projects that represent a major portion of portfolio dollars."

with PG&E staff to discuss this memorandum and its final scores by April 30, 2019.

Attachment A: Final ESPI Performance Scores

Metric		Workpapers				Custom			
		Max Points	Max Percent of Total Points	2018 Score	2018 Points	Max Points	Max Percent of Total Points	2018 Score	2018 Points
1	**Timing and Timeliness of Submittals** Timely submittals: all lists, inventories, plans, studies, workpapers and project/measure documentation; timing and advanced announcement of submittals (spreading out submission when available rather than holding and turning in large batches); timely follow-up IOU responses to review disposition action items including intention to submit/re-submit with proposed schedule.	5	10%	2.04	2.04	5	10%	2.50	2.50
2	**Content, Completeness, and Quality of Submittals** Completeness, appropriateness, comprehensiveness, accuracy, and clarity of submittals. Submittal adherence to Commission policies, Decisions, and prior Commission Staff dispositions and/or guidance. Do the submittals include all materials required to support the submittal proposed values, methods and results. Is the project or measure clearly articulated? Are proposed or utilized methods clearly explained including step-by-step method or procedure descriptions. Will the proposed or utilized approach provide accurate results. Are all relevant related or past activities and submittals appropriately noted or disclosed, analyzed or discussed. Are the pros/cons of alternate possible approaches or conclusions discussed to support that the chosen one is most appropriate.	15	30%	1.5	4.5	15	30%	4.00	12.00
3	**Proactive Initiative of Collaboration** IOU efforts to bring either measures, projects, studies, questions, and/or savings calculation methods and tools to Commission Staff for discussion in the early formative stages, before Commission Staff review selection. In the case of tools, before widespread use in the programs. Commission Staff expects collaboration among the IOUs to develop common or coordinated submissions and for the IOUs to undertake joint or coordinated planning activities and study work. The IOUs are expected to engage with Commission Staff in early discussions on unique or high profile, high impact measures or projects before program or customer	5	10%	5.00	5.00	5	10%	4.73	4.73

	commitments are made. The IOUs are expected to engage with Commission Staff on planning and execution of studies that support proposed offerings, tools, or determination of proposed baselines or other programmatic assumption that can impact ex ante values to be utilized.								
4	**Program Administrator's Due Diligence and Quality Assurance/Quality Control Effectiveness** Commission Staff expects the IOU to have effective Quality Control (QC) and Quality Assurance (QA) processes for their programs and measures. The IOUs are expected to have a pro-active approach to reviewing existing measure and project assumptions, methods and values and updating those to take into account changes in market offerings, standard practice, updates to DEER methods and assumptions, changes to codes, standards and regulations, and other factors that warrant such updates. The depth and correctness of the IOU's technical review of their ex ante parameters and values, for both Core, Local Government and Third Party programs, are included under this metric. The depth and correctness of the IOU's technical review of their own staff and subcontractor work related to supporting deemed and custom measure and project submissions are included in this metric. Evidence of review activities is expected to be visible in submissions so that Commission Staff can evaluate the effectiveness of the IOU internal QA/QC processes.	12.5	25%	3.00	7.5	12.5	25%	5.00	12.50
5	**Program Administrator's Responsiveness to Needs for Process and Program Improvements** This metric reflects the IOUs ongoing efforts to improve their internal processes and procedures resulting in increased ex post evaluated gross and net savings impacts. Commission Staff looks not only to the IOU's internal QC/QA processes, but also whether individual programs and their supporting activities incorporate and comply with CPUC policies and prior Commission Staff disposition guidance in their program rules, policies, procedures and reporting. This includes changes to program rules, offerings and internal operations and processes required to improve overall review and evaluation results. A particularly important area for focus is the improvement of net portfolio performance via the removal of measures and or participation with low program attribution (NTG).	12.5	25%	5.00	12.50	12.5	25%	5.00	12.50
Total		**50**	**100%**		**31.54**	**50**	**100%**		**44.23**

Attachment B Custom Project Scores and Feedback

The table below lists the identification numbers associated with each disposition. All custom projects were scored using new metrics adopted in 2016. The metrics are shown in the Table below.

Table 3 *2016 Adopted Performance Metrics*

Metric	2016 CPUC Adopted Performance Metrics	Maximum Points	% of TOTAL POINTS
Metric 1	**Timeliness and Timing of Submittals** Timely submittal of all documentation and follow-up utility responses to review disposition action items.	**5.0**	**10%**
Metric 2	**Content, Completeness and Quality of Submittals** Completeness, appropriateness, comprehensiveness, accuracy, and clarity of submitted documentation. In addition, this metric is an assessment of the utility's adherence to CPUC policies, Decisions, and prior Commission Staff disposition guidance.	**15.0**	**30%**
Metric 3	**Proactive Initiation of Collaboration** Utility's efforts to bring either measures, questions, and/or savings calculation tools to Commission Staff for discussion in the early formative stages, before Commission Staff review selection. In the case of tools, before widespread use in the programs. Commission Staff expects collaboration among the utilities and for the program administrators to engage with Commission Staff in early discussions on high profile, high impact measures well before customer commitments are made.	**5.0**	**10%**
Metric 4	**Utility Due Diligence and QA/QC Effectiveness** Commission Staff expects the utility to have effective Quality Control (QC) and Quality Assurance (QA) processes for its programs and measures. The depth and correctness of the utility's technical review of its ex ante parameters and values, for both Core and Third Party programs, are included under this metric.	**12.5**	**25%**
Metric 5	**Utility Responsiveness to Needs for Process & Program Improvements (Course Corrections)** This metric reflects the utility's efforts to improve, operationalize, and improve its internal processes which are responsible for the creation and assignment of ex ante parameters and values. Commission Staff looks not only to the utility's internal QC/QA process, but also whether individual programs incorporate and comply with CPUC policies and prior Commission Staff disposition guidance in its program rules, policies, and procedures.	**12.5**	**25%**

	93		118	
Metric	**SCORE**	**Commission Staff Specific Comments on Each Metric**	**SCORE**	**Commission Staff Specific Comments on Each Metric**
Metric 1	**1.0**	Submittal wasn't received until December 2017	**4.0**	The data requested by Commission Staff for the analysis was provided in a timely manner.
Metric 2	**N/A**	No review of follow-up submittals since PG&E accepted EAR team updated Ex Ante savings values.	**12.0**	The project documentation was clear and comprehensive. The data requested by Commission Staff for the analysis was well organized which helped facilitate Commission Staff's analysis.
Metric 3	**N/A**	No review of follow-up submittals since PG&E accepted EAR team updated Ex Ante savings values.	**N/A**	N/A
Metric 4	**N/A**	No review of follow-up submittals since PG&E accepted EAR team updated Ex Ante savings values.	**10.0**	The IOU's analysis of the data indicated significant concerns about the integrity of the implementer's data and M&V approach.
Metric 5	**N/A**	No review of follow-up submittals since PG&E accepted EAR team updated Ex Ante savings values.	**9.0**	The IOUs made a diligent effort to review and analyze the results of the implementer's data.

Attachment C: Workpaper Scores and 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 IOU 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 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.	1	+	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 IOUs 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.	1	+	no	+	+	+
PGECOHVC174	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.	1	+	-	+	-	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 a 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.	1	-	no	no	no	no
PGECODHW106	8	Electric Heat Pump Water Heater	See comment for PGECODHW104	1	-	no	no	no	no
PGECODHW122	2	Instantaneous Gas Hot Water Heater	See comment for PGECODHW104	1	-	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.	1	-	no	+	no	no
PGECOLTG163	6	LED Candelabra	See comment on PGECOLTG165	1	-	no	+	no	no
PGECOLTG175	4	LED Residential Recessed Downlight	See comment on PGECOLTG165	1	-	no	+	no	no
PGECOLTG164	6	LED Globe	See comment on PGECOLTG165	1	-	no	+	no	no
PGECOLTG141	8	LED IOUR Lamp	See comment on PGECOLTG165	1	-	no	+	no	no
PGECOLTG177	5	LED BR-R-Lamps	See comment on PGECOLTG165	1	-	no	+	no	no
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.	1	+	-	no	yes	yes
PGECOLTG177	6	LED BR-R-Lamps	See comment for PGECOLTG165.	1	+	-	no	yes	no
PGECOLTG178	4	LED High-Bay and Low-Bay Fixtures	While PGE provided a workpaper plan and kept the Commission aware of progress, the commercial lighting research timelines were not managed well, delaying workpaper submission by about six months. The delayed research required the CPUC to issue an extension to avoid market disruptions. While quality of the final research will be assessed in later ESPI scores since the research is incomplete at this time, CPUC recognizes that the performance based approach is positive, and PGE has provided leadership.	1	-	no	Yes	no	+
PGECOLTG151	9	LED Outdoor Street and Area Lighting	See above	1	-	no	Yes	no	+
PGECOLTG179	6	LED Ambient Comm Troffer Fixture	See above	1	-	no	Yes	no	+
PGE3PHVC151	4	Economizer Repair	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no
PGE3PHVC152	5	Economizer Controls	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no
PGE3PHVC156	3	Condenser Coil Cleaning	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no

PGE3PHVC157	3	Unoccupied Supply Fan Control	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no
PGE3PHVC158	3	Evaporator Coil Cleaning	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no
PGE3PHVC159	6	Duct Test & Seal: Nonresidential	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no
PGE3PHVC160	3	Refrigerant Charge Adjustment	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no
PGECOAGR122	0	Ag Process Fan VSD	New workpaper. No issues.	1	Yes	no	Yes	no	no
PGECODHW104	7	Residential Storage Water Heater	SCG and SCE were the lead for these measures. A single workpaper spanned multiple years and it was not clear what calculator was used for each year. The 2018 calculator was available in September, but it was not used and the WP was not submitted until late in December 2018. SDG&E has a responsibility for the quality of the workpaper, even if it is adopted.	1	no	-	+	no	no
PGECODHW106	8	HP Water Heater Electric	Adopted workpaper from SCE but is too brief and unclear how they completed calculations.	1	no	-	no	no	no
PGECOHVC139	6	Res HVAC QM v2- Retroactive 2018	Workpaper modified to modified due to E-4952 which include retroactive changes to the EUL. Late submittal in December of retroactive 2018 paper.	1	-	yes	no	no	no
PGECOHVC172	1	Packaged Vertical Heat Pump	No issues. Updated costs.	1	Yes	no	no	no	no
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.	1	+	-	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.	1	-	yes	no	no	no

Workpaper Submissions

WP ID	Rev	Title	Submission Status: EAR Team Comments
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	LED Globe	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 IOUR20, IOUR30 and IOUR38 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
PGECOHVC174	0	Multiple Speed Unitary Air-Cooled Commercial Air	Detailed review – resubmit - scored in detailed review section
PGE3IOUGR117	8	Agricultural Ventilation Fans	Review waived - interim approval
PGECOHVC167	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
PGECOHVC128	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
PGECOHVC126	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
PGECOHVC128	9	Unitary Air-Cooled Commercial Air Conditioners and Heat Pumps	Review waived - interim approval
PGECOAPP128	4	Retail Products Platform	Review waived - interim approval

PGECOHVC139	6	Residential HVAC Quality Maintenance (QM)	Review waived - interim approval
PGECOALL100	9	Custom Measure	EAR team doesn't track this workpaper
PGECOAPP128	5	Retail Products Platform	Review waived - interim approval
PGECOHVC120	7	Air-Cooled Chillers	Review waived - interim approval
PGECOHVC106	5	Variable Frequency Drives (VFDs) for HVAC Fans	Review waived - interim approval
PGECOALL109	3	Energy Upgrade California	Review waived - interim approval
PGECODHW124	1	High efficiency DHW Boiler (>75 MBTU/hr)	Review waived – Interim approval
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
PGECODHW106	8	Electric Heat Pump Water Heater	Detailed review – resubmit - scored in detailed review section
PGECOAPP127	3	Clothes Washers	Review waived - interim approval
PGECOAPP127	4	Clothes Washers	Review waived - interim approval
PGECOLTG179	5	LED Ambient Commercial Fixtures and retrofit Kits	Review waived - interim approval
PGECOPUM106	1	Water Pump Upgrade	Review waived - interim approval
PGECOALL111	2	Tier 2 Audio Visual (AV) Advanced Power Strip	Review waived – Interim approval
PGECOALL111	3	Tier 2 Audio Visual (AV) Advanced Power Strip	Review waived – Interim approval
PGECOAPP128	6	Retail Products Platform	Preliminary review – incomplete - scored in preliminary review section
PGECOPRO108	0	Pipe Insulation	Review waived – Interim approval
PGECOAPP128	6	Retail Products Platform	Review waived - interim approval
PGECOLTG151	8	LED Outdoor Street and Area Lighting	Detailed review – approved
PGECOLTG178	3	LED High-Bay and Low-Bay Fixtures	Detailed review – approved
PGE3IOUGR113	2	Scroll Compressors	Review waived – Interim approval
PGE3IOUGR115	2	CHR Unit - Electric and Gas	Review waived – Interim approval
PGE3PREF115	2	Glycol tank Insulation	Review waived – Interim approval
PGE3PREF126	2	ECM for Walk-In Evaporator with Fan Controller	Review waived – Interim approval
PGECOPRO108	1	Pipe Insulation	See Workpaper Review section.
PGE3PMOT102	2	Enhanced Fan Time Delay BPM Motor	Review waived – Interim approval
PGECOPRO107	5	Boiler Tuneup for Drycleaners	Review waived – Interim approval
PGECOLTG140	7	MR16 Lamps	Expired by IOU - This Workpaper may not be used
PGECOLTG163	7	LED Candelabra	Review waived – Interim approval
PGECOLTG175	5	LED Residential Recessed Downlight	Expired by IOU - This Workpaper may not be used
PGECOLTG164	7	LED Globe	Review waived – Interim approval
PGECOLTG141	9	LED IOUR Lamp	Review waived – Interim approval

PGECOLTG177	6	LED BR-R-Lamps	Preliminary review – incomplete - partial approval for NR measures	
PGECOLTG165	6	LED A-Lamps	Preliminary review – incomplete - partial approval for NR measures	
PGECOLTG165	5	LED A-Lamps	Review waived – Interim approval	
PGECODHW126	2	Demand Control for Centralized Water Heater Recirculation Pump	Review waived – Interim approval	
PGECOFST129	0	Commercial Conveyor Broiler	Review waived – Interim approval	
PGECODHW127	0	Laminar Flow Restrictors	Review waived – Interim approval	
PGECOLTG165	6	LED A-Lamps	Review waived – Interim approval	
PGECOLTG177	6	LED BR/R Lamps	Review waived – Interim approval	
PGECOLTG178	4	LED High-Bay and Low-Bay Fixtures	See Workpaper Review section.	
PGECOLTG151	9	LED Outdoor Street and Area Lighting	See Workpaper Review section.	
PGECOLTG179		LED Ambient Comm Troffer Fixture	See Workpaper Review section.	
PGE3PHVC151	4	Economizer Repair	See Workpaper Review section.	
PGE3PHVC152	5	Economizer Controls	See Workpaper Review section.	
PGE3PHVC156	3	Condenser Coil Cleaning	See Workpaper Review section.	
PGE3PHVC157	3	Unoccupied Supply Fan Control	See Workpaper Review section.	
PGE3PHVC158	3	Evaporator Coil Cleaning	See Workpaper Review section.	
PGE3PHVC159	6	Duct Test & Seal: Nonresidential	See Workpaper Review section.	
PGE3PHVC160	3	Refrigerant Charge Adjustment	See Workpaper Review section.	
PGECOAGR122	0	Ag Process Fan VSD	See Workpaper Review section.	
PGECODHW104	7	Residential Storage Water Heater	See Workpaper Review section.	
PGECODHW106	8	HP Water Heater Electric	See Workpaper Review section.	
PGECOHVC139	6	Res HVAC QM v2- Retroactive 2018	See Workpaper Review section.	
PGECOHVC172	1	Packaged Vertical Heat Pump	See Workpaper Review section.	

Process Adder	ESPI Metrics					
	Weight	1	2	3	4	5
IOUs are required to submit all workpapers subject to the most recent DEER update before January 1 of the subsequent year. PG&E submitted workpaper and workpaper revisions in response to DEER2019 updates, meeting the January 1 2019 due date.	1	yes	no	no	no	no
IOUs are expected to conduct well designed research as the basis for workpaper revisions. The IOU's scope includes all the activities required for successful research including planning, oversight of the research and incorporation of the findings into the workplan. While PG&E provided a workpaper plan and kept the Commission aware of progress, the commercial lighting research timelines were not managed well, delaying workpaper submission by six months. The delayed research required the CPUC to issue an extension to avoid market disruptions. An assessment of the quality of the final research will be assessed in later ESPI scores since the research is incomplete at this time.	1	-	no	no	-	no
PG&E needs to demonstrate its commitment to stakeholder communication. Lack of transparency and communication have resulted in unintended consequence and complaints from stakeholders.	1	no	no	no	-	no
IOUs are required to submit workpaper submission plans each year within thirty days of the filing of the Resolution. PGE submitted the appropriate data to SCE for compilation, the plan included active and inactive workpapers organized by measure type and flagged by key characteristics.	1	yes	no	no	no	no
PG&E has also authored the “PG&E Resource Savings Rulebook” (Rulebook), originally a PG&E specific Rule Book, now being adapted to a statewide document. This is a valuable and well put together description of the California energy efficiency framework.	1	no	no	no	no	+
PG&E collaborated with the other IOUs and the CPUC to present two successful workpaper training sessions in November 2018 geared to third party contractor bidders.	1	no	no	yes	no	no
PG&E as well as the other IOUs have been helpful and patient with the new workpaper and DEER consultants during this transition period.	1	no	no	+	no	no

Attachment D: 2018 Performance Annual Ratings

Custom Scoring

2018 Annual Custom Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	N/A Adjusted Disposition Score (1-5)	2.50	N/A	10.00	3.60	13.40	
Review Process Score Enhancements	Technical & Policy QC Increase	0.00	0.00	1.00	1.00	2.50	
	Implementation Increase	0.00	0.00	0.00	0.00	1.00	
Total Score	N/A Adjusted Final Metric Score (1-5)	2.50	4.00	4.73	5.00	5.00	Total Points
	N/A Adjusted Metric points	2.50	12.00	4.73	12.50	12.50	44.23

2017 Annual Custom Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	Dispositions Score	2.45	1.70	1.00	2.16	1.77	
Review Process Score Enhancements	Technical & Policy QC Increase	0.00	0.00	2.00	2.50	2.50	
	Implementation Increase	0.00	0.00	1.00	0.00	0.00	
Total Score	Final Metric Score (1-5)	2.45	1.71	4.00	4.67	4.28	Total Points
	Metric points	2.45	5.13	4.00	11.68	10.70	33.96

Workpaper Scoring

2018 Annual Workpaper Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	PG&E "-"	72.4%	40.0%	0.0%	20.0%	0.0%	
	PG&E "+"	20.7%	0.0%	71.4%	40.0%	83.3%	
	PG&E "Yes"	6.9%	60.0%	28.6%	40.0%	16.7%	
	Dispositions Score %	**24%**	**30%**	**86%**	**60%**	**92%**	
	Dispositions Score	**1.21**	**1.50**	**4.29**	**3.00**	**4.58**	
Review Process Score Enhancements	PG&E "-"	33%	0%	0%	100%	0%	
	PG&E "+"	0%	0%	50%	0%	100%	
	PG&E "Yes"	67%	0%	50%	0%	0%	
	Process Score %	**33%**	**0%**	**75%**	**0%**	**100%**	
	Process Increase Score	**1.67**	**0.00**	**3.75**	**0.00**	**5.00**	
	Process Increase Weight	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	
	Process Increase Wtd Score	**0.83**	**0.00**	**1.88**	**0.00**	**2.50**	
Total Score	**Final Metric Score (1-5)**	**2.04**	**1.50**	**5.00**	**3.00**	**5.00**	**Total Points**
	Metric Points	**2.04**	**4.50**	**5.00**	**7.50**	**12.50**	**31.54**

2017 Annual Workpaper Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	PGE "-"	10%	21%	0%	58%	50%	
	PGE "+"	90%	0%	63%	33%	18%	
	PGE "Yes"	0%	79%	38%	8%	32%	
	Dispositions Score %	**90%**	**39%**	**81%**	**38%**	**34%**	
	Dispositions Score	**4.52**	**1.97**	**4.07**	**1.88**	**1.70**	
Review Process Score Enhancements	PGE "-"	0%	33%	0%	0%	17%	
	PGE "+"	0%	0%	33%	0%	17%	
	PGE "Yes"	100%	67%	67%	100%	67%	
	Process Score %	**50%**	**33%**	**67%**	**50%**	**50%**	
	Process Increase Score	**2.50**	**1.67**	**3.34**	**2.50**	**2.50**	
	Process Increase Weight	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	
Total Score	**Final Metric Score (1-5)**	**5.00**	**2.81**	**5.00**	**3.13**	**2.95**	**Total Points**
	Metric points	**5.00**	**8.43**	**5.00**	**7.83**	**7.38**	**33.63**

Explanations of scoring tables row entries

1. The row labeled with *IOU "-"* lists the percent of workpaper reviews undertaken where the Commission Staff evaluation of the materials or information indicated that the IOU performance in this metric for the submission did not meet minimum expectations or requirements relative to the metric.
2. The row labeled with *IOU "+"* lists the percent of workpaper reviews undertaken where the Commission Staff evaluation of the materials or information indicated that the IOU performance in this metric for the submission exceeded minimum expectations or requirements relative to the metric.
3. The rows labeled with *IOU "Yes"* lists the percent of workpaper reviews undertaken where the Commission Staff evaluation of the materials or information indicated that the IOU performance in this metric for the submission exceeded met minimum expectations or requirements relative to the metric.
4. The "Dispositions Score %" row (and "Process Increase Score" for workpapers) indicates how the combination of the three rows of scores (+, -, and yes) sum into a total points multiplier for each metric. Each row contributes to the total based on the row count over the total count for all three rows.
5. The "Disposition Score" (and "Process Increase Score" for workpapers) row converts the % score into a numeric value of up to five by directly applying the % to a value of 5.
6. The custom row labeled with "*Technical & Policy QC Increase"* lists Commission Staff points added to the metric based on an evaluation of the overall IOU performance in putting into place quality assurance and/or quality control methods, documents and/or training for staff and contractors related to this metric area that are expected to improve the ability of review personnel to identify and cure issues going forward on projects started during 2016 but not yet seen in the custom review activity.
7. The custom row labeled with "*Implementation Increase"* lists Commission Staff points added to the metric based on an evaluation of the overall IOU performance in putting into place new or changed program rules, eligibility criteria, incentive structures, application and implementation contract processes and procedures in 2016 related to this metric area that are expected to improve performance going forward on projects started but not yet seen in the custom review activity.
8. The workpaper rows labeled with "*Review Process Score Enhancements"* lists Commission Staff scoring for each metric based on an evaluation of the overall IOU performance in putting into place quality assurance and/or quality control methods, documents and/or training for staff and contractors that are expected to improve the ability of review personnel to identify and cure issues going forward on workpapers. This score is weighted as an increase to the disposition score based on the fractional weight listed in the "Process Increase Weight" row.
9. The "Final Metric Score" row indicates the total score for each metric as a sum of the Direct Work product Review Score plus the Review Process Score Enhancements (either as a simple sum for custom or a weighted value sum for workpapers) to provide a final metric score with the final score constrained between a maximum score of 5 and a minimum score of 1.
10. The "Metric Points" row provides the point value derived from the Final Metric Score row. If the maximum point value associated with a metric is greater than 5 then the score is multiplied by the max point value divided by 5 to obtain the metric point value related to the final score.