STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

PUBLIC UTILITIES COMMISSION

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Date: March 26, 2018

To: San Diego Gas and Electric (SDG&E)

From: Peter Lai, California Public Utilities Commission

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

Subject: Final 2017 Efficiency Savings and Performance Incentive (ESPI) Ex Ante Review Performance Scores

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I. Summary of 2017 ESPI Scores- Custom Projects and Workpapers

The scores[1] contained in this memo are final, and San Diego Gas and Electric Company (SDG&E) shall use the total final ex ante review performance points from the table below together with the weighting[2] for each category to calculate the 2017 Efficiency Savings and Performance Incentive (ESPI) ex ante review component award. Breakdown of SDG&E's 2017 ESPI score of 51.55/100 for workpapers and custom projects are shown below in Table 1. SDG&E's 2017 total points improves over its 2016 total points of 50.06.

Table 1: 2017 ESPI Scoring for Workpapers and Custom Projects

SDG&E 2017 ESPI Ex-Ante Review Performance Scores and Points		Workpapers				Custom			
Metric	Metric Area of Scoring	2017 Score	Metric Weight Factor	2017 Points	Max Points	2017 Score	Metric Weight Factor	2017 Points	Max Points
1	Timing and Timeliness of Submittals	2.50	10%	2.50	5	4.19	10%	4.19	5
2	Content, Completeness, and Quality of Submittals	2.08	30%	6.24	15	2.63	30%	7.89	15
3	Proactive Initiative of Collaboration	2.09	10%	2.09	5	2.50	10%	2.50	5
4	Due Diligence and Quality Assurance/Quality Control Effectiveness	2.09	25%	5.23	12.5	2.60	25%	6.50	12.5
5	Responsiveness to Needs for Process and Program Improvements	2.13	25%	5.31	12.5	3.64	25%	9.10	12.5
Total				**21.37**	**50**			**30.18**	**50**

The metric scoring area descriptions are expanded in Attachment A. The final category scores are explained in more detail below as well as in Attachments B through D to this memo. As required by the ESPI decision, the relative weighting of the custom versus deemed portion of the performance component of the ESPI will be published by Commission staff in June 2018 after reviewing the utilities' final 2017 savings claims filed on May 1, 2018.

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.

II. Commission Staff Findings 2017 Ex Ante Activities

A. Custom Projects Review Overview

1. Summary of 2017 Achievements

SDG&E's custom project score have improved compared to last year by 2.07 points from 28.11 points

[1] Pursuant to Decision (D).13-09-023, D.15-10-028 and D16-08-019, Commission staff and consultants completed the 2017 Efficiency Savings and Performance Incentive (ESPI) mechanism ex ante review performance scoring as prescribed in Table 3 of D.16-08-019. D.16-08-019 established a consolidation of categories of metrics on which the utilities are evaluated and further directed in Ordering Paragraph 19 that the ESPI scores "shall be weighted for the utility program administrators based on the proportion of deemed savings and custom measures in each utility's portfolio".

[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 2017 savings claims and published for each utility the weights for the custom and deemed categories.

in 2016 to 30.18 points in 2017. SDG&E continues to demonstrate efforts to improve its performance. Commission staff's observations include:

- The SDG&E's program administration staff commitment to improve its internal quality assurance and quality control (QA/QC) processes.
- SDG&E staff continues to collaborate to clarify various Commission staff guidance.
- SDG&E actively and constructively participated in the Track 2 Working Group (T2WG) activities.
- SDG&E has implemented an internal early custom project review process to screen projects for eligibility and compliance issues.
- SDG&E has implemented a "Custom Project Rule Book" to standardize program rules for both core and third party implemented programs.
- SDG&E Engineering staff has taken a lead role in initiating a conversation statewide with the EnergyPro consultant and the other utilities to discuss and recommend potential solutions to address the identified software issues.
- SDG&E has provided Commission staff an extensive list of activities that demonstrate its commitment to improve its QA/QC processes. Some of the efforts listed to improve QA/QC include implementing a workflow process tracking system, increased focus on reviews of third party sponsors projects, training for technical reviewers, engineers, implementers and program managers, custom project pipeline reviews, and implementation of its DSM Central Technical Review Document to ensure consistent compliance across projects with the CPUC staff's project documentation checklist.
- Commission staff are aware that all four utilities are collaborating to develop statewide standardized documentation and processes for custom projects. We applaud this effort and expect that it will result in improved statewide portfolio performance in the coming years.

2. Summary of Areas Requiring Improvement

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

- Systematic errors in a widely used statewide calculation tool.
- Inadequate calculation methodology and analysis approaches.
- Insufficient measurement and verification plans.
- Incomplete documentation in project submittals.
- Lack of evidence of program influence in project documentation.

In some cases, the total number of action items[3] identified in a specific issue area may seem low even though that issue area remains a significant concern and requires much improved action by SDG&E. For instance, as shown in Table 2, zero percentage of the issues are associated with the "Issues Related to Net Impacts"; however SDG&E must continue to make efforts to provide documentation that demonstrates program influence.

[3] "Action items" are directives for corrective actions issued by Commission staff to the program administrators relative to the review of a particular custom project energy efficiency program application.

B. Deemed Workpapers Review Overview

1. Summary of 2017 Achievements

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

- SDG&E appropriately responded to the Phase 1 disposition for screw-in lamps.
- Improved its efforts to keep track of other PAs' approved workpapers prior to submitting workpapers of its own that are based on those PAs' versions. This improved throughout the year.
- SDG&E's successful submissions of "short form" workpapers which reference other PAs' workpapers and describe how these measures will be incorporated into SDG&E's programs.
- Commission staff are aware that all four PAs are now working together to collaboratively develop statewide standardized documentation and processes for several deemed measure work papers. Commission staff applaud this effort and expect that it will result in improved Statewide portfolio performance in the coming years.

2. Summary of Areas of Improvement

SDG&E's workpaper score have decreased slightly compared to last year by 0.58 point from 21.95 points in 2016 to 21.37 points in 2017. The top areas that SDG&E needs of improvement include similar concerns that Commission staff have highlighted in prior years. Commission Staff's concerns are described in more detail below and include:

- When adopting another PAs' workpapers SDG&E must apply due diligence to identify and correct any shortcomings in those workpapers, especially those already identified in dispositions we have issued.
- Increase proactive work on appropriate baselines in workpapers for normal replacement measures.

III. Discussion

A. Custom Projects Ex Ante Review Discussion

Custom project energy efficiency program applications are reviewed by Commission staff. The review findings and directions to the program administrators (PA) are presented in documents referred to as dispositions. In early 2016, Commission staff revised the custom project ex ante review disposition template to include a categorization of the actions that staff requires the utility to address for the project under review. Table 2 summarizes the 79 action items identified across 11 dispositions issued between January 1, 2017 and December 31, 2017. The detailed action items for each project are included in Attachment B1.

Commission staff acknowledges that the projects were not selected at random. Our selections drew upon the type of projects that had issues in the past or where we expected to find deficiencies for various reasons. We also selected projects to determine whether the PA has corrected issues from similar project types that Commission staff reviews identified in the past.

Table 2: Summary of Categorized Action Items for Custom Projects

Issue Area	Action Category	Quantity of Issues Reviewed	Percent of Total
Issues Related to Gross Savings Impacts	Analysis Assumptions	6	7.6%
	Calculation Method	2	2.5%
	Calculation Tool	47	59.5%
	M&V Plan	2	2.5%
	Revise to Match CPUC Savings Estimate	0	0.0%
	Subtotals	57	72.2%
Process, Policy, Program Rules	Baseline	1	1.3%
	CPUC Policy	1	1.3%
	Did Not Follow Previous CPUC Guidance	1	1.3%
	Eligibility	1	1.3%
	ER Preponderance of Evidence	0	0.0%
	EUL/RUL	3	3.8%
	Fuel Switching	0	0.0%
	Incentive Calculation	2	2.5%
	Maintenance	0	0.0%
	Measure Cost	1	1.3%
	Measure Type	0	0.0%
	PA Program Rules	1	1.3%
	Repair	0	0.0%
	Self-Generation	2	2.5%
	Subtotals	13	16.5%
Documentation Issues	Inadequate Response to Precious EAR	0	0.0%
	Missing Documents	5	6.3%
	Missing Required Information	2	2.5%
	Project Scope Unclear	0	0.0%
	Subtotals	7	8.9%
Issues Related to Net Impacts	NTG	0	0.0%
	Program Influence	0	0.0%
	Subtotals	0	0.0%
Other Issues		2	2.5%
	Grand Total	79	100.0%

1. Issues Related to Gross Savings Impacts

In 2017 approximately 72 % of issues identified (57 total actions) in custom project dispositions were related to gross savings impacts. Six (6) of the eleven (11) dispositions issued in 2017 had comments associated with these issues. Forty seven (47) actions were related to calculation tools are associated with the EnergyPro™ analysis tool used for Savings by Design projects. CPUC Project ID numbers 0061 identified 18 and Project 0127 identified 29 issues that required SDG&E action. The issues were in just two dispositions but indicate systematic problems where they are likely to be found in all Saving

By Design projects It is evident that SDG&E and the Statewide team for this program had not vetted this tool before using it in this program. When accepting analysis tools for use in estimating savings for custom projects more care must be taken to review the results provided by the tool and not rely on vendors or other agency's reviews to ensure the accuracy of the tool under the range of uses expected in the PA programs. As highlighted in the 2016 ESPI memorandum, 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. Commission staff observes that not providing a complete and concise description of a calculation methodology and the inability to provide an accurate savings estimate remains a weakness for many complex projects. SDG&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. In 2017, the following CPUC Project ID numbers had issues related to gross savings impacts: 0061, 0126, 0127, 0144, 0150 and 0178. Please refer to Attachment B1, for a detailed description of the issues identified for each project.

2. Process, Policy, Program Rules

In 2017 approximately 17% of issues identified (13 total actions) in custom project dispositions were related to Process, Policy, or Program Rules. Eight (8) of the eleven (11) dispositions issued in 2017 had comments associated with these issues. The actions were the result of a wide variety of issues ranging from non-compliance with Commission policy to eligibility issues to baseline issues. Correct assignment of EUL/RUL continues to be a problem. In 2017 the following CPUC project ID numbers had issues related to Process, Policy, or Program Rules: 0052, 0061, 0126, 0127, 0131, 0144, 0149 and 0150. Please refer to Attachment B1, for a detailed description of the issues identified for each project.

3. Documentation Issues

In 2017 nearly 9% of issues identified (7 total actions) in custom project dispositions were related to incomplete or insufficient project documentation. Seven (7) of the eleven (11) dispositions issued in 2017 had comments associated with these issues. The actions were primarily the result of SDG&E not providing required documents and information in documentation package submittals. Commission staff created a "Ready for Review" checklist in 2015, that SDG&E has been directed to complete when submitting project documentation packages for Commission staff selected projects. In some instances the checklist appears to be used on a "pro forma" basis, and although items are checked off, they are not actually provided. SDG&E needs to pay closer attention to the details when preparing project documentation packages. Missing information results in data requests and creates delays in completing project reviews. In 2017 the CPUC project ID numbers that had documentation issues include: 0052, 0061, 0126, 0127, 0131, 0132 and 0178. Please refer to Attachment B1, for a detailed description of the issues identified for each project.

4. Issues Related to Net Impacts

In 2017 there were no issues identified in custom project dispositions related to net savings impacts. As noted in the 2016 ESPI memo, issues related to program influence directly affect the scoring on ESPI Metrics 2, 4, and 5. SDG&E must continue to make efforts to 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 SDG&E continue its efforts in reducing free ridership since as of January 1, 2018 all portfolio goals are based on net savings impacts.

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

The 2016 ESPI memorandum 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:

Commission staff understands that SDG&E currently does not generally rely on third party technical reviewers and third party implementers for custom projects. However as the implementation work shifts to third parties a directed by the CPUC, Commission staff have concern that some third-party implementer firms also perform technical review of program applications. Commission staff believes, that a conflict of interest may exist for several technical review contractors that are also third-party implementers for other PA's,. 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. CPUC Staff expect this issue to be resolved on a State wide basis and require SDG&E to be a party to the solution.

B. Deemed Workpapers Ex Ante Review Discussion

SDG&E's deemed program continued at a similar pace to previous years. The deemed ex ante review included three phase 1 workpapers which were included in dispositions published on March 1st, 2017. Additionally, two phase 2 workpaper were reviewed. SDG&E relies heavily on the workpaper development efforts of other PAs. Therefore, scores for the several workpaper sections are heavily influenced by the level of due diligence SDG&E has applied in the adoption of work done by others. Adopting work from other PAs is on one hand a positive step. However, if that work is old and thus possibly outdated, is currently undergoing our review, has previously issued dispositions, or has not previously been reviewed, then SDG&E has a due diligence responsibility as if the submission is their own work.

The comments below are organized by the 5 metric areas of scoring. The detailed scores for each metric are included in Attachment C.

1. Timeliness

SDG&E submitted 1 revised workpaper in a timely fashion, following the final Phase 1 review issued on May 26, 2017 for LED screw-in lamps. We observed some inconsistencies in ex ante data and values, but these were resolved through the regular workpaper meetings with SDG&E.

However, there is a lack of consistency in this pace of response to dispositions across other programs. SDG&E should endeavor to provide timely responses and follow Commission policy whenever it receive a formal workpaper review covering either its own submissions or submissions adopted from other PA's. For example, SDG&E submitted workpaper WPSDGENRLG0083 for Ambient Commercial Fixtures and Retrofit Kits adopting a PG&E workpaper. Commission staff returned a preliminary review on this workpaper (WPSDGENRLG0083) on July 18, 2017 requiring a resubmission. SDG&E did not revise this workpaper until December 2017.

2. Content, Completeness, and Quality of Submissions

SDG&E is meeting expectations in some programs areas. Expectations were met within the lighting programs and SDG&E's workpaper submission followed direction for the Phase 1 disposition on screw-in lamps. Additionally, SDG&E submits many "short form" workpapers which reference other PAs' workpapers but describe how these measures will be incorporated into SDG&E's programs. CPUC staff generally consider SDG&E's submissions of short form workpapers as positive. For example, SDG&E's recent submission of a revision to PG&E's LED troffer workpaper, WPSDGENRLG0083, was also well documented. SDG&E should work to improve submission for other program areas to meet similar quality of content standards as they have achieved in these lighting submissions.

3. Proactive Initiative of Collaboration

This metric is only applicable to two of the SDG&E workpapers we reviewed in 2017. First, SDG&E met expectations for this metric with regard to its submission of a revision to PG&E's LED troffer workpaper, WPSDGENRLG0083. On the other hand, SDG&E should reach out to CPUC staff if direction is unclear or major shifts from direction are anticipated. The revised Residential Variable Speed Swimming Pool Pump workpaper did not follow directed standard practice baseline for multi-family building types because SCE – the statewide lead PA - stated that single speed pool pumps would meet current Title 24 requirements when we had issued a disposition directing that error be corrected. We are disappointed that SDG&E did not identify this issue and take action regarding this point by initiating a collaborative activity to update their adopted version. In not responding to this disposition and then adopting SCE's statewide lead workpaper without modification, SDG&E has implicitly decided to not follow the direction within the disposition.

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

Commission staff's feedback on this metric is largely negative. This metric is only applicable to two of the SDG&E workpapers we reviewed in 2017. As noted above, SDG&E met expectations with regard to their submission of a revision to PG&E's LED troffer workpaper, WPSDGENRLG0083.

However, adopting work from other PA's carries some risk. The lack of SDG&E internal due diligence was highlighted by the timing and its decision to adopt SCE's Process Fan VFD up to 75 HP workpaper. Two weeks after the phase 1 disposition was published rejecting this workpaper (SCE17PR008.0), SDG&E submitted a short form workpaper to adopt it.

5. PA's Responsiveness

In 2017, SDG&E met expectations for responsiveness to preliminary reviews from the ex ante review team. We appreciate that SDG&E has a process in place to review and respond to official reviews.

However, SGD&E is inconsistent in this regard. For example, SDG&E was non-responsive to the Phase 1 disposition for the Residential Variable Speed Swimming Pool Pumps. SDG&E did not update the

VSD swimming pool pump workpaper for 2017. Instead, they waited until later and only adopted the workpaper submitted by SCE, the statewide lead PA, for 2018.

Additionally, CPUC staff remains concerned that normal replacement (NR) measures are not properly considering the likely replacement technology when a user decides to replace that technology, equipment or system outside of any PA efficiency program. The predominate approach for most workpapers that SDG&E either submits or adopts from others appears to be to select the very least efficient equipment that could legally be installed as the baseline from which savings are calculated. Many lighting measures utilized in the SDG&E portfolio are still defined this way.

IV. The Scoring Methodology

The 2017 ex ante review performance score was developed using a detailed scoring by metric 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 ex ante values. Attachment A summarizes the Metrics adopted in D.16-08-019 for 2016 and beyond as well as the Commission staff developed scores and points for 2016. D.16-08-019 also directed that the custom and workpaper scoring be weighted together into a final score based of the PA 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 2018 based upon the PAs final 2017 savings claims to be filed on May 1, 2018.

In accordance with D.16-08-019, the IOUs' ex ante 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 2016 ex ante review 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 ex ante due diligence 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[4]. If not

[4] For example, workpapers and custom projects which do not involve measures which in some way are expected to utilize DEER values, assumptions or methods, in the development of new kWh, kW and therm savings values would not receive

applicable to a metric that item was not used in the final score development for the 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 ratings were then assigned a 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 is provided in Attachment C.

For custom projects, each metric was directly scored using the rating scale described above in accordance with the maximum points allocated to the metric and the applicability of the metric to the work product reviewed by Commission staff. A project by project summary of the custom project scoring is included in Attachment B2.

The above process resulted in custom and workpaper work product review scores. Next, utility-specific review process "Review Process Score Enhancements" were developed for each applicable metric based on observed policy and technical review or program implementation processes and procedures developed and under implementation in 2017 that are expected to positively impact future selected project reviews. Commission staff believes it is important to provide ESPI points for positive due diligence developments as recognition of the effort and continue encouragement even before a change in project-level results is observed.

In the custom scoring process Commission staff added points as "Enhancements" in the area of Policy/Technical QA/QC for metric 2, 3, 4 and 5 to reflect SDG&E technical review staff's positive efforts in these metric areas as discussed earlier. Those initiatives include policy compliance and early project development stage review procedures and processes, participation in the Track 2 Working Group, and coordination activities with the other utilities related to Statewide standardization of custom project processes and procedures. Although these efforts have not yet reflected themselves into the dispositions scores Commission staff believes recognition of the efforts of SDG&E technical and policy review staff is warranted. SDG&E staff has described to Commission staff other planned additions to their early review activities to address recurring issues identified in previous ESPI memorandums and earlier in this memorandum. Commission staff believes these activities offer promise to improve the overall SDG&E ex ante performance, however, we must defer review those activities until later after implementation to assess if they warrant further augmentation of the SDG&E ex ante performance scoring for 2018 and beyond.

Commission staff has not observed similar efforts in the program implementation area and thus "Review Process Score Enhancements" were assigned only to metrics 3 and 4 as an "Implementation Increase". The absence of such evidence of improvement on the program implementation side is disappointing and we urge SDG&E staff to take such actions as outlined earlier so as to allow further improvement in performance and scoring during 2018.

Workpaper scores also include "Review Process Score Enhancements." Process issues represent critical

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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 ")

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.

To produce final scores, the individual 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 SDG&E.[5]

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. For comparison, both the 2017 and 2016 scoring tables are included.

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 scheduled April 12, 2018 with SDG&E staff to discuss this memo and its final scores.

[5] 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."

Attachment A: Final ESPI Ex Ante Review Scores

Metric		Workpapers				Custom			
		Max Points	Max Percent of Total Points	2017 Score	2017 Points	Max Points	Max Percent of Total Points	2017 Score	2017 Points
1	**Timing and Timeliness of Submittals**	5	10%	2.50	2.50	5	10%	4.19	4.19
	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 PA responses to review disposition action items including intention to submit/re-submit with proposed schedule.								
2	**Content, Completeness, and Quality of Submittals**	15	30%	2.08	6.24	15	30%	2.63	7.89
	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.								
3	**Proactive Initiative of Collaboration**	5	10%	2.09	2.09	5	10%	2.50	2.50
	PA 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 CPUC staff review selection. In the case of tools, before widespread use in the programs. Commission staff expects collaboration among the PAs to develop common or coordinated submissions and for the PAs to undertake joint or coordinated planning activities and study work. The PAs are expected to engage with CPUC staff in early discussions on unique or high profile, high impact measures or projects before program or customer commitments are								

	made. The PAs are expected to engage with CPUC 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 PA to have effective Quality Control (QC) and Quality Assurance (QA) processes for their programs and measures. The PAs 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 PA'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 PA'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 PA internal QA/QC processes.	12.5	25%	2.09	5.23	12.5	25%	2.60	6.50
5	**Program Administrator's Responsiveness to Needs for Process and Program Improvements** This metric reflects the PAs 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 PA'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%	2.13	5.31	12.5	25%	3.64	9.10
Total		**50**	**100%**		**21.37**	**50**	**100%**		**30.18**

Attachment B1 Custom Project Action Items and Notes

Ref	Action Number:	Summary of CPUC Staff Required Action by the PA:	Action Category
131	**1**	In the 9/19/16 CMPA List, the PA did not flag this project as a Prop 39 project. However, CPUC Staff found that this high school is listed in the California Department of Education K-12 Prop 39 funding summaries with close to $3,213,409 in total funding awarded. CPUC Staff reminds the PA that savings claims and financial incentives may only consider valid energy efficiency measures that exceed baseline code requirements as stipulated in CPUC Decision 14-10-046. In addition, if Prop 39 funding pays for the entire cost of a measure, CPUC Staff considers it inappropriate use of ratepayer funds for the PA to further incent the measures. The PA shall determine what the Prop 39 funding for this high school is allocated towards and if the Prop 39 funds cover the full cost of the proposed new construction measures for this project, CPUC Staff requires the PA to set the measure's allowable costs to zero, not claim final impacts, and not award energy efficiency financial incentives for the project.	CPUC Policy
131	**2**	CPUC Staff requires that for all custom projects the PA must submit their Technical Review as a standalone document. In the disposition for SDGE-16-C-C-0144_[redacted], CPUC Staff provided the PA with a detailed outline of what must be addressed in a Technical Review. Savings By Design projects are not excepted from this requirement. For this project, the PA technical review must include an assessment of the Prop 39 funding aspects of the measures documented in this application. The PA technical review must include the name of the reviewer and firm affiliation	Missing documents
132	**1**	CPUC Staff requires that for all custom projects the PA must submit their Technical Review as a standalone document. In the disposition for SDGE-16-C-C-0144_[redacted], CPUC Staff provided the PA with a detailed outline of what must be addressed in a Technical Review. Savings By Design projects are not excepted from this requirement. The PA technical review must include the reviewer's name and firm affiliation.	Missing documents

144	**1**	CPUC Staff finds that Measure 2, SAT Reset, is ineligible. The submitted [redacted] proposal is clear that a new control system is replacing the existing controls, including control valves, for 36 AHU reheat zones. The replacement of the control system evokes the 2013 Title 24 alteration rules and the requirements of Section 140.4(f), Supply Air Temperature Reset Controls, apply. Hence, the measure does not exceed minimum code requirements and under the applicable CPUC policy for this particular project application, the measure is ineligible. The PA shall remove the measure from the ex ante impacts, incorporate the SAT Reset as part of the baseline for Measure 1, disallow its costs in setting the overall project cost cap, and reduce the eligible financial incentives accordingly.	Eligibility
144	**2**	CPUC Staff finds that the PA did not follow prior guidance regarding the determination and assignment of EUL values for REA measure types. The EUL for REA measure types are required to be set as the lesser of either the measure EUL or the RUL of the underlying host equipment. For Measure 1, CPUC Staff identifies the measure EUL as 15 years corresponding to the DEER EUL ID HVAC-EMS and the host equipment RUL as 6.6 years corresponding to the DEER EUL ID for chillers (HVAC-chlr). Hence, the PA shall set the EUL for Measure 1, Central Plant Optimization, to 6.6 years. Likewise for Measure 2, SAT Reset, CPUC Staff finds that the measure EUL corresponds closely with the chilled water reset control DEER EUL ID (HVAC-Reset) of 10 years, and the host equipment may be considered the AHU equipment with an equivalent default RUL value of 5 years (DEER EUL ID HVAC-VAV box). Hence, the PA shall set the EUL for Measure 2 to 5 years.	EUL/RUL
144	**3**	CPUC Staff found in the workbook entitled "10382573 - *[CUSTOMER NAME]*_PA.xlsx" that the full measure costs cited in the [redacted] proposal were reversed, i.e., the full cost for Measure 1 in the [redacted] proposal is $149,075 and the full cost of Measure 2 is $189,825. The PA shall correct the discrepancy and check that the correct costs are tracked and reported correctly through their tracking systems.	Measure cost
144	**4**	Only recording the current draw on the infrequently used condenser water pumps may be inadequate and CPUC Staff would prefer to see RMS kW data loggers used as the PA plan proposes for all other equipment.	M&V plan

144	**5**	CPUC Staff found that the PA's technical reviewer applied a 50% reduction to the Measure 1 ex ante savings, after first reducing the Measure 1 savings for the scaled DEER deemed savings for adding VFDs to the chilled water pumps that is being claimed as a deemed measure through the EEBR program. The PA technical reviewer cites prior findings of central plant optimization projects as the reason for the reduction. CPUC Staff requests that the PA provide their documented findings for the chiller plant optimization measure that lead to this decision for our examination since there are additional projects with the same measure at similar facilities listed in the PA's project pipeline as "Not Ready for Review" on the CMPA Bi-monthly list.	Analysis assumptions
150	**1**	CPUC Staff finds that the PA did not determine what the current purchasing practices for new laboratory low temperature freezers are. The PA must establish what the industry standard practice (ISP) is since these low temperature freezers are not governed by either federal or state code requirements. The use of the existing freezer demand and energy consumption is not acceptable as the technical baseline for the ROB measure type without corroboration of the ISP baseline. CPUC Staff recommends that the PA contact PG&E (Tim Xu) to discuss the status of their assessment of this measure that is currently underway and arrive at a statewide ISP technical baseline.	Baseline
150	**2**	CPUC Staff finds that the PA did not account for any heating impacts to the conditioned space when claiming HVAC interactive effects for this measure. The PA shall revise the claimed impacts to account for the space heating impacts and reflect those impacts in the estimated financial incentives.	Analysis assumptions
150	**3**	The hourly net electrical grid impact analysis workbook (Hourly_XXXX_010115_123115) uses electric grid purchases from January 1, 2015 through December 31, 2015 in the analysis from multiple electric billing meters. CPUC Staff finds that the analysis needs to reflect the overall cumulative impacts of all the EE projects implemented during the same time period for the entire campus on the microgrid, including the impacts for this proposed project. The PA will revise the hourly net electrical grid impact analysis for this project to reflect the overall cumulative impacts of this and all prior EE projects that coincide with the electric grid purchases data.	Self generation
150	**4**	CPUC Staff finds that the claim of a 20 year EUL for the low temperature freezers is unsupported. Commercial freezers have a 12 year EUL value assigned in the DEER. The PA shall either provide supporting documentation to validate and support a 20 year EUL for this measure or assign a 12 year EUL to the measure.	EUL/RUL

149	**1**	PA did not follow the required Ex Ante Review (EAR) process and paid the final customer incentives without either a CPUC Staff waiver from review or final approval. CPUC Staff finds that this not the only instance where the PA fails to properly track and follow projects selected for review. The PA must make concrete strides to correct this situation throughout, both with the PA's engineering review team and with the program implementation staff to adhere and follow the EAR process.	Did not follow previous CPUC guidance
149	**2**	The PA shall revise the EUL for Measure 2 to 6.7 years in accordance with prior CPUC Staff guidance on EUL values for REA measure types.	EUL/RUL
178	**1**	CPUC Staff, the PA and the implementer have discussed this project on two weekly telephone calls. CPUC Staff expressed concern about the lack of detailed documentation describing the proposed M&V plan for this project. The PA has submitted some revised documentation related to the M&V plan for this project. Unfortunately the PA has not provided any details describing how the peak demand kW reduction will be measured for this project. The PA must revise the project documentation and describe how the peak demand kW reduction will be measured for this project. The PA must revise and resubmit the project documentation including the calculation methodology and M&V plans to reflect this requirement before executing an incentive agreement for this project.	Calculation method
178	**2**	During one of the telephone discussions for this project, CPUC Staff noted that the PA had identified a significant number of baseline data points where the data were suspected to be inaccurate. CPUC Staff required that the bad data be removed from the baseline analysis. The PA has removed these data points from the baseline analysis, noting that more than 5 out of the 12 months total data have been removed. CPUC Staff note that the period of inaccurate data includes the peak demand period for this climate zone. The PA must obtain 12 months of baseline data from the customer and use these data for the post installation ex ante savings true-up analysis for this project. Ideally the data will have less than 15% invalid points and must include the peak demand period for this climate zone. The revised analysis will be submitted for CPUC Staff review at the completion of the M&V period for this project.	M&V plan

178	**3**	CPUC Staff note that the 6/19/2017 bi-monthly project list submitted by the PA describes this project as a "Core" project in column 6 with a program name in column 5 "3220 - SW-COM-Calculated Incentives-Calc (EEBI)". CPUC Staff's understanding is that this is a third party implemented project. The PA must provide the corrected information for this project and ensure that all future submissions on the bi-monthly project list are accurate.	Missing required information
178	**N1**	The initial project upload was a disorganized set of zipped files inside of zipped files. CPUC staff were unable to navigate the submission and found during a telephone call where the project was discussed that the PA was also unable to identify where specific documents were located in the submission and that key documentation supporting program influence had not been provided. The PA must endeavor to improve the organization of its project documentation uploads creating a logical directory structure and only zipping the root directory. Zipped files inside of zipped files are difficult to navigate and strongly discouraged by CPUC Staff.	Documentation organization
127	**1**	Table 25 of Section 5.7 of the 2013 California ACM manual states that the cooling for buildings with total lab area greater than 50,000 square feet shall be provided by water cooled chillers. Table 48 of section 5.8.2 states that for chillers over 300 tons, two water cooled centrifugal chillers shall be modeled. In the sub-section titled "Electric Chiller Cooling Efficiency Adjustment Curves", the manual states that Path B performance curves from Appendix 5.7 of the ACM shall be used. Possibly this is related to the designation of spaces in EnergyPro as "Industrial" instead of "Laboratory". This change was implemented in the attached modified standard building models. The model parameters are calculated in sheets "ChlrCurves" and "ClgPumps" of the attached notes workbook.	Calculation tool

127	**2**	The ventilation values entered for both the standard and the proposed models were not consistent with the exhaust air values or the minimum air flow values in the models. Large exhaust air flow values were entered for specific zones, zero exhaust rates were entered for other lab zones, and exhaust rates were not always matched to supply air rates. In order for the building to be pressure-balanced, the ventilation air flow needs to match the exhaust air. Moreover, in DOE-2.1E, which is the calculation engine for EnergyPro, outdoor air and exhaust air are throttled whenever the supply air flow needed to meet the space load is below the specified outdoor or exhaust air flows. Finally, the California ACM requires that for lab areas that are equipped with variable exhaust systems, both the standard and proposed models use exhaust flow schedules that are published in the ACM Appendix. To correct this, outdoor air schedules and minimum zone flow schedules were applied to the systems and zones based on the ACM schedules. Non-lab areas were allowed to vary flow to zero during unoccupied periods, and lab areas were controlled according to the ACM schedules. These schedules are derived in sheets "OccupSA_Prp" and "OccupSA_Std" of the attached notes workbook.	Calculation tool
127	**3**	Fan power values in the proposed model did not match expectations based on data from the construction documents. Calculations of corrected values are demonstrated in the "FanPower" sheet of the attached notes workbook. Exhaust fan power is grouped with the return fans in these calculations, but fan heat is based solely on the return fans.	Calculation tool
127	**4**	Pump properties in the DOE-2.1E proposed building model created by EnergyPro are not consistent with the properties that were input, and the program does not account for primary and secondary pumping. Pump inputs for the attached corrected models were calculated in the "HtgPumps" and "ClgPumps" sheets of the attached notes workbook.	Calculation tool
127	**5**	Heating pump properties in the standard building model do not match the requirements of the California ACM manual, which specifies temperature drop of 40 F, rated power of 19 W/gpm, and minimum speed of 10%. From these values, basic principles can be used to calculate a pump head value of 64 feet (see "HtgPumps" sheet of attached notes workbook). Similar calculations were made for cooling pumps in the "ClgPumps" sheet of the attached notes workbook.	Calculation tool

127	**6**	HVAC systems established by EnergyPro for the standard model were not sized properly. Air flow for the lab HVAC systems is fixed based on lab exhaust requirements, and thus should be identical between the proposed and standard models. Cooling and heating system capacities need to be determined based on sizing simulations (as demonstrated by StandardNC_SizingC.INP and StandardNC_SizingH.INP in the attachments to this disposition). HVAC equipment sizes from the sizing simulation were manually transferred to the final simulation (StandardNC_Corrected.INP in attachments). See "ProposedAirFlow" and "StdSizing" sheets of the attached workbook ("SDGE-16-C-C-0127_[redacted]-EAR-Notes-2017-11-27.xlsx").	Calculation tool
127	**7**	The standard model created by EnergyPro included one air handler that served two floors and two plant equipment rooms. The 2013 ACM Manual states that the standard model shall be modeled with one air handler per floor. Moreover, Systems 5 and 6 in the proposed model serve plant equipment rooms. Since these systems have significantly different use scenarios than the remainder of that building floor, it is appropriate to keep them separate in the standard model.	Calculation tool
127	**8**	The chiller characteristics in the proposed model did not match the performance data in the construction documents. Corrected values are provided in the "ChlrCurves" and "ClgPumps" sheets of the attached notes workbook.	Analysis assumptions
127	**9**	Several zones in the proposed building model were set up as unheated zones, whereas the same zones in the standard building model were heated.	Calculation tool
127	**10**	Part load performance of variable speed chillers is significantly affected by the temperature difference between entering condenser water and leaving chilled water. The DOE2.1E calculation engine used by EnergyPro does not have the capability to model this effect. In order to approximate the effect for the corrected proposed model, this temperature difference was calculated hourly based on hourly output from the proposed model (see sheet "ChlrTemps" of the attached notes workbook). The weighted average of this temperature difference for the annual simulation was 29 degrees F. This value was used to adjust the variable speed chiller curve from the California ACM Appendix 5.7 to represent the typical operating condition. This adjusted curve was then applied to both the standard and proposed building models.	Calculation tool

127	**11**	The adjustment to savings due to on-site photovoltaic (PV) system generation was not correct. The adjustment for PV needs to be applied to both the standard and proposed energy before calculating savings, as demonstrated in the attached PV calculation workbook ("SDGE-16-C-C-0127_[redacted]-[redacted]-CALC-2017-11-27.xlsx"). For this project, CPUC staff assumed that this customer is not on a Net Energy Meter tariff for this facility; therefore hourly analysis of the PV system was utilized. For future projects that includes PV (or other renewables), the PA should indicate the rules or scenarios from the on-site generation guidance that apply to the project.	Calculation tool
127	**12**	The peak period calculations in the PV calculation workbook were not correct. Since the peak period occurs during daylight saving time, and hourly values from DOE2 are based on solar time, a one hour shift needs to be applied when determining peak period averages. Also, the formulas that were attempting to account for the PV were erroneous. Corrected peak period calculations are provided in the attached PV calculation workbook.	Calculation tool
127	**13**	The CPUC staff corrected analysis indicates that the project is not eligible for Savings By Design program incentives due to savings margin below 10%.	Incentive calculation
127	**14**	No documentation of the PA technical review was found in the submitted files. A clearly identified report needs to be submitted, along with any additional modeling that was performed.	Missing documents
127		The notes in this section relate to issues with the EnergyPro program used for the Savings By Design projects, and are common to all projects modeled with version 6 of EnergyPro. These issues will be further addressed in a Statewide Guidance Document, and they will need to be addressed for all current projects that have not yet been approved.	Calculation tool
127	**1**	Several versions of the EnergyPro model were included in the submitted project files, and it was not clear from the documentation which version was the final one. Future submissions shall include a summary report that lists the name and location of the final energy model input and output files.	Calculation tool
127	**2**	The EnergyPro models did not use the correct weather files for simulations. The simulation weather files for Savings By Design need to be taken from the set of 16 locations specified in Title-24 Joint Appendix JA2.1 (CEC-400-2012-005-CMF-REV2). These are the locations that were used for determination of the DEER peak periods. The source for the weather data is the CBECC weather files supplied with the ACM Supporting Content.	Calculation tool

127	**3**	Simulation dates need to be set up for the year 2009 in order to be consistent with the CEC weather files and the TDV definitions (Title24_2013_TDV_Methodology_Report_23Feb2011.pdf, Table 16). The ACM Manual (CEC-400-2013-004-CMF, section 5.2.5) lists the simulation year as 1991, but that is an error.	Calculation tool
127	**4**	The EnergyPro simulations did not use the correct TDV data. EnergyPro was using 30-year TDV values, and the values are offset by two hours through the year (i.e. the first hour of the year in the model is using the third hour value of the published TDV values, and so on). The 15-year TDV values are prescribed as applicable to lighting and HVAC measure for nonresidential buildings. Since nonresidential buildings are dominated by lighting and HVAC, the whole building analysis in Savings By Design needs to use the 15-year TDV values published by CEC for whole building commercial applications, and the offset problem needs to be corrected.	Calculation tool
127	**5**	It is unclear in the latest Savings By Design program manual whether TDV is still used for calculation of incentives. In the 2015 Savings By Design Participant Handbook, the Whole Building Approach Incentives section indicates that the kWh incentive rate is based on "TDV % better than Title 24". The 2017 Savings By Design Handbook has the reference to TDV removed, and describes savings simply as "% better than Title 24".	Calculation tool
127	**6**	Sizing for the standard baseline must be accomplished by performing sizing simulations (where equipment is automatically sized by the program; see CEC-400-2013-004-CMF, sections 2.6.2, 5.7.5.1, and 5.7.6). For buildings where the minimum supply air flow ratio is limited by ventilation air, the sizing simulations should be run as constant volume. For systems serving laboratory spaces in which air flow is determined by exhaust requirements, only cooling and heating are sized, and fan control shall be identical to the proposed systems. Sizing factors of 1.15 for fans and cooling and 1.25 for heating are applied to peak loads, and the resultant capacities are entered back into the model for the final simulation. Minimum flow ratios for the final simulation are based on the maximum of the outdoor air and exhaust air requirements and a 20% flow ratio.	Calculation tool
127	**7**	While the 2013 ACM Manual states that the standard model shall be modeled with one air handler per floor, zones that have unique use scenarios (such as plant equipment rooms, kitchens, computer rooms, auditoriums, and gymnasiums) shall be configured into separate systems in the standard model (see CEC-400-2013-004-CMF, section 5.1.2).	Calculation tool

127	**8**	There are issues in EnergyPro and DOE2.1E with the relationships between specified ventilation air, exhaust air, supply air and minimum supply air. If exhaust air flow is specified in a model, it will set a minimum limit on outdoor air flow and supply air flow for the system design. However, if the minimum flow ratio indicates an hourly supply flow that is less than the specified ventilation or exhaust air, those values will be throttled during that hour. Thus, it is critical that the minimum flow ratio entered into the model be at least as high as the outdoor air ratio and the exhaust air ratio.	Calculation tool
127	**9**	For laboratory zones that are designed for variable exhaust, both the standard and proposed models are required by the 2013 California ACM manual to use schedules for the exhaust flow as published in Appendix 5.4B of the ACM (see CEC-400-2013-004-CMF, page 5-88).	Calculation tool

127	**10**	Table 25 of Section 5.7 of the 2013 California ACM manual (CEC-400-2013-004-CMF, page 5-94) states that the cooling for buildings with total lab area greater than 50,000 square feet shall be provided by water cooled chillers. Table 48 of section 5.8.2 (CEC-400-2013-004-CMF, page 5-167) states that for chillers over 300 tons, two water cooled centrifugal chillers shall be modeled. In the sub-section titled "Electric Chiller Cooling Efficiency Adjustment Curves" (CEC-400-2013-004-CMF, page 5-171) , the manual states that Path B performance curves from Appendix 5.7 of the ACM shall be used. The interface needs to apply these rules based on area in the model designated as laboratory. Possibly some method in the model is needed to handle situations where the modeler designates a zone that is effectively a laboratory as some other type (such as industrial). For example the designation of lab could be controlled by specification of lab/industrial exhaust flow at the zone level. It would be helpful for the user to have a summary report showing the floor area for each activity area in the model.	Calculation tool
127	**11**	The chiller characteristics in the proposed model did not match the performance data in the construction documents. Corrected values are provided in the "ChlrCurves" sheet of the attached workbook.	Calculation tool
127	**12**	Part load performance of variable speed chillers is significantly affected by the temperature difference between entering condenser water and leaving chilled water. The DOE2.1E calculation engine used by EnergyPro does not have the capability to model this effect. In order to approximate the effect for the corrected proposed model, this temperature difference was calculated hourly based on hourly output from the proposed model (see sheet "ChlrTemps" of the attached workbook). The weighted average of this temperature difference for the annual simulation was 29 degrees F. This value was used to adjust the variable speed chiller curve from the California ACM Appendix 5.7 to represent the typical operating condition. This adjusted curve was then applied to both the standard and proposed building models. If possible, curves that include the temperature dependence should be used in a model (e.g. when DOE2.2 or EnergyPlus is used). If not, then an assumed temperature difference needs to be applied. The development of a custom performance curve of this type requires a more complete set of performance data than the four points that were provided for the project under review.	Calculation tool

127	**13**	Several zones in the proposed building model were set up as unheated zones, whereas the same zones in the standard building model were heated. Space conditioning requirements for each zone shall be unchanged between the standard and proposed buildings.	Calculation tool
127	**14**	Pump properties in the DOE-2.1E proposed building model created by EnergyPro are not consistent with the properties that were input, and the program does not account for primary and secondary pumping. EnergyPro takes input of motor horsepower or kW and GPM, and it writes pump head and loop delta T to the input file. Motor horsepower values are typically oversized compared to the power that the motor will actually draw when installed. If pump head is specified in the construction documents, this is a better indicator of the actual power. Thus, EnergyPro should have the option to take pump head and motor efficiency as inputs for defining pump power. In addition, while DOE2.1E cannot model primary and secondary circulation loops, EnergyPro should have inputs for these and do a weighted average to calculate model inputs that represent both primary and secondary pumps (see "HtgPumps" and "ClgPumps" sheets of the attached workbook). If primary pumps are constant, and secondary pumps are variable, then the primary pumps can be modeled as a constant auxiliary electric input for the primary equipment.	Calculation tool
127	**15**	Heating pump properties in the standard building model do not match the requirements of the California ACM manual, which specifies temperature drop of 40 F, rated power of 19 W/gpm, and minimum speed of 10% (see CEC-400-2013-004-CMF, section 5.8.5, Pump Motor Power-Per-Unit-Flow). From these values, basic principles can be used to calculate a pump head value of 64 feet (see "HtgPumps" sheet of the attached workbook). Similar calculations are shown in the "ClgPumps" sheet for chiller and tower pumps.	Calculation tool
127	**16**	Fan power values in the standard model shall follow the requirements of the California ACM manual (see CEC-400-2013-004-CMF, section 5.7.3). These calculations are demonstrated in the FanPower sheet of the attached workbook. When exhaust fans serve multiple zones, it is appropriate to model them as central return fans with fan heat set to zero.	Calculation tool
127	**17**	Fan power values for the proposed model shall follow the requirements of the California ACM manual (see CEC-400-2013-004-CMF, section 5.7.3). These calculations are demonstrated in the "FanPower" sheet of the attached workbook. Where fan mechanical efficiency is not available, the rules for standard fans shall be used. Exhaust fan power can be added to return fans, as long as heat gain from those fans are not included in the fan heat (fan delta T).	Calculation tool

126	**1**	CPUC Staff have found little evidence of program influence for this project. The Savings By Design (SBD) program describes "The Participation and Basic Process" in section 2.4 of the program manual. The process includes the PA identifying and influencing the customer and/or the customer's designer to adopt more costly, more efficient options for their project design that they were otherwise planning to adopt. The PA must provide historical project documentation demonstrating that it has followed the SBD Program design and rules by influencing the customer and/or the customer's designer to adopt the proposed measures.	PA program rules
126	**2**	CPUC Staff are not able to find any design documentation supporting the baseline and proposed ventilation rates assumed in the analysis for the lab ventilation control measure. There is no discussion about the customer's environmental health and safety group's minimum allowable ventilation rates or any regulatory agency's (e.g. OSHA, NFPA) requirements for minimum ventilation rates. An article (https://www.labdesignnews.com/article/2013/12/review-recent-changes-current-lab-ach-rate-standards-guidelines) found on the internet by CPUC Staff written by Gordon Sharp in 2013 (the chairman of Aircuity, the vendor of the proposed ventilation controls) seems to indicate that the PA's assumed ventilation rates are likely incorrect. The PA must provide documentation to support the baseline and proposed ventilation rates. What were the proposed ventilation rates before the PA influenced the customer to adopt the measure? What are the customer's requirements for similar labs? What are the regulatory requirements for labs with similar usage to the proposed labs?	Analysis assumptions
126	**3**	The PA has not provided any description of the usage of the lab spaces for the project. What are the expected hours of operation? What are the functions of the labs (e.g. [redacted], [redacted])?	Missing required information
126	**4**	The PA has provided an excerpt from the 2013 Title 24 manual which describes that variable air flow is a mandatory measure for Laboratories. The PA must demonstrate that the baseline analysis proposed for this project includes variable air flow.	Calculation method

126	**5**	The PA has not provided a description of how the lab ventilation rates will be verified after the project is installed and the building is fully occupied and operating as expected by the customer. The assumed post installation operating conditions appear to be speculative without any documented basis.	M&V plan
61	**1**	HVAC systems established by EnergyPro for the standard model were significantly oversized. Sizing for the standard baseline must be accomplished by performing a sizing simulation (as demonstrated by Admin_StdNC_SizingC.INP and Admin_StdNC_CorrectedH.INP in the attachments to this disposition). HVAC equipment sizes from the sizing simulation were manually transferred to the final simulation (Admin_StdNC_Corrected.INP in attachments). Minimum flow ratios for the final simulation were based on outdoor air and exhaust air requirements, as shown in the "StdSizing" sheets of the attached notes workbook ("SDGE-16-C-C-0061_[redacted]-EAR-Notes-2017-11-27.xlsx"). These models shall be updated for true-up based on post-installation review of the project.	Calculation tool
61	**2**	The standard building is modeled with large packaged VAV systems from the category of units greater than 760 kBtu/hr. The systems are modeled with default DOE2 performance curves for part load efficiency, and the systems are not allowed to unload below 25%. A survey of commercially available systems in this size range indicate unloading as low as 6%, and typical minimum unloading of about 12%. The attached corrected models were run with performance curves from the DEER packaged VAV prototypes, and minimum unloading was set to 15%. These values shall be used in post-installation true-up models.	Calculation tool
61	**3**	The standard model created by EnergyPro included one air handler that served the entire two-floor building. The 2013 ACM Manual states that the standard model shall be modeled with one air handler per floor. In addition, the building includes three data closets, which have significantly different use scenarios than the remainder of the building. It is appropriate to keep the data closets on separate HVAC systems in the standard model. Post-installation review and true-up for the project shall use the attached corrected models as the starting point for updated energy savings calculations.	Calculation tool
61	**4**	In DOE-2.1E, which is the calculation engine for EnergyPro, outdoor air and exhaust air are throttled whenever the supply air flow needed to meet the space load is below the specified outdoor or exhaust air flows. To correct this the minimum flow ratio for the zones on a system was set equal to the minimum percentage of outside air for that system. Post-installation review and true-up for the project shall use the attached corrected models as the starting point for updated energy savings calculations.	Calculation tool

61	**5**	Demand controlled ventilation (DCV) was included in the proposed building model. No mention of this measure was found in construction documents, so it was removed for the attached corrected models. If the presence of DCV is observed during Post-installation review, then the measure can be added to the proposed model during true-up. The measure shall be modeled as a scheduled minimum outside air quantity that is based on hourly occupancy schedules for the zones affected by the measure.	Analysis assumptions
61	**6**	Heating pump properties in the standard building model do not match the requirements of the California ACM manual, which specifies temperature drop of 40 F, rated power of 19 W/gpm, and minimum speed of 10%. From these values, basic principles can be used to calculate a pump head value of 62 feet (see "HtgPumps" sheet of attached notes workbook). These values shall be used in post-installation true-up models.	Calculation tool
61	**7**	Fan power values in the standard model did not match expectations based on the requirements of the California ACM manual. Calculations of corrected values are demonstrated in sheet "FanPower" of the attached notes workbook. These calculations shall be used for post-installation true-up models.	Calculation tool
61	**8**	Exterior wall insulation values entered for the proposed building neglected to account for thermal bridging of steel studs. Also, the exterior wall included an air layer with an R-value of 5.1, which is not realistic. Corrected exterior walls are included in the attached proposed building models, which shall be used for post-installation true-up.	Analysis assumptions
61	**9**	Customer and design team incentives are to be recalculated using the corrections above as well as any true-ups post construction.	Incentive calculation
61	**10**	No documentation of the PA technical review was found in the submitted files. A clearly identified report needs to be submitted, along with any additional modeling that was performed.	Missing documents
61		The notes in this section relate to issues with the EnergyPro program used for the Savings By Design projects, and are common to all projects modeled with version 6 of EnergyPro. These issues will be further addressed in a Statewide Guidance Document, and they will need to be addressed for all current projects that have not yet been approved.	Calculation tool
61	**1**	Several versions of the EnergyPro model were included in the submitted project files, and it was not clear from the documentation which version was the final one. Future submissions shall include a summary report that lists the name and location of the final energy model input and output files.	Calculation tool

61	**2**	The EnergyPro models did not use the correct weather files for simulations. The simulation weather files for Savings By Design need to be taken from the set of 16 locations specified in Title-24 Joint Appendix JA2.1 (CEC-400-2012-005-CMF-REV2). These are the locations that were used for determination of the DEER peak periods. The source for the weather data is the CBECC weather files supplied with the ACM Supporting Content.	Calculation tool
61	**3**	Simulation dates need to be set up for the year 2009 in order to be consistent with the CEC weather files and the TDV definitions (Title24_2013_TDV_Methodology_Report_23Feb2011.pdf, Table 16). The ACM Manual (CEC-400-2013-004-CMF, section 5.2.5) lists the simulation year as 1991, but that is an error.	Calculation tool
61	**4**	The EnergyPro simulations did not use the correct TDV data. EnergyPro was using 30-year TDV values, and the values are offset by two hours through the year (i.e. the first hour of the year in the model is using the third hour value of the published TDV values, and so on). The 15-year TDV values are prescribed as applicable to lighting and HVAC measure for nonresidential buildings. Since nonresidential buildings are dominated by lighting and HVAC, the whole building analysis in Savings By Design needs to use the 15-year TDV values published by CEC for whole building commercial applications, and the offset problem needs to be corrected.	Calculation tool
61	**5**	It is unclear in the latest Savings By Design program manual whether TDV is still used for calculation of incentives. In the 2015 Savings By Design Participant Handbook, the Whole Building Approach Incentives section indicates that the kWh incentive rate is based on "TDV % better than Title 24". The 2017 Savings By Design Handbook has the reference to TDV removed, and describes savings simply as "% better than Title 24".	Calculation tool
61	**6**	Sizing for the standard baseline must be accomplished by performing sizing simulations (where HVAC equipment is automatically sized by the program; see CEC-400-2013-004-CMF, sections 2.6.2, 5.7.5.1, and 5.7.6). Sizing factors of 1.15 for fans and cooling and 1.25 for heating are applied to peak loads, and the resultant capacities are entered back into the model for the final simulation. Minimum flow ratios for the final simulation are based on the maximum of the outdoor air and exhaust air requirements and a 20% flow ratio.	Calculation tool
61	**7**	While the 2013 ACM Manual states that the standard model shall be modeled with one air handler per floor, zones that have unique use scenarios (such as plant equipment rooms, kitchens, computer rooms, auditoriums, and gymnasiums) shall be configured into separate systems in the standard model (see CEC-400-2013-004-CMF, section 5.1.2).	Calculation tool

61	**8**	Heating pump properties in the standard building model do not match the requirements of the California ACM manual, which specifies temperature drop of 40 F, rated power of 19 W/gpm, and minimum speed of 10% (see CEC-400-2013-004-CMF, section 5.8.5, Pump Motor Power-Per-Unit-Flow). From these values, basic principles can be used to calculate a pump head value of 62 feet (see "HtgPumps" sheet of the attached workbook). Similar calculations are shown in the "ClgPumps" sheet for chiller and tower pumps.	Calculation tool
61	**9**	Fan power values in the standard model shall follow the requirements of the California ACM manual (see CEC-400-2013-004-CMF, section 5.7.3). These calculations are demonstrated in the FanPower sheet of the attached workbook. When exhaust fans serve multiple zones, it is appropriate to model them as central return fans with fan heat set to zero.	Calculation tool
61	**10**	The standard building is modeled with large packaged VAV systems from the category of units greater than 760 kBtu/hr. The systems are modeled with default DOE2 performance curves for part load efficiency, and the systems are not allowed to unload below 25%. A survey of commercially available systems in this size range indicate minimum unloading ranging from 6% to 17%, and typical minimum unloading of about 12%. The attached corrected models were run with performance curves from the DEER packaged VAV prototypes, and minimum unloading was set to 15%. In addition, standard practice needs to be established for the method of control for operation below the minimum unloading point, i.e. whether systems typically operate with compressor cycling or with compressor running in hot gas bypass mode. When operating with hot gas bypass, the compressor operates continuously at low speed, and refrigerant bypasses the evaporator as needed to modulate cooling capacity. This is significantly less efficient than cycling operation, but can give more stable temperature control for VAV systems.	Calculation tool
61	**11**	Exterior wall insulation values entered for the proposed building neglected to account for thermal bridging of steel studs. Also, the exterior wall included an air layer with an R-value of 5.1, which is not realistic. Corrected exterior walls are included in the attached proposed building models. Modeling software interface needs to prompt the user for type and spacing of studs and then calculate or perform a lookup to determine the appropriate effective R-value for cavity walls (as per Title 24 Joint Appendix JA4).	Calculation tool

52	**1**	The hourly net electrical grid impact analysis workbook ([redacted]_XXXX_XXXX_HourlyMarginCalc) uses electric grid purchases from January 1, 2015 through September 30, 2015 and October 1, 2014 through December 31, 2014 in the analysis. CPUC Staff finds that the analysis should to be revised to use the actual grid purchases for a single contiguous year, specifically January 1, 2016 through December 31, 2016. Also, the overall cumulative impacts of all the EE projects implemented during the same time period for the entire campus on the microgrid, including the impacts for this proposed project, should be reflected in the hourly net electrical grid impact analysis to determine the final eligible impacts. CPUC Staff expects the PA to correct the hourly net electrical grid impact analysis for this project to reflect the overall cumulative impacts of this and all prior EE projects that coincide with the electric grid purchase data claimed for this campus when the final savings are claimed.	Self generation
52	**2**	CPUC Staff requires that for all custom projects the PA must submit their Technical Review as a standalone document. In the disposition for SDGE-16-C-C-0144_[redacted]_[redacted], CPUC Staff provided the PA with a detailed outline of what must be addressed in a Technical Review. Savings By Design projects are not excepted from this requirement.	Missing documents

Attachment B2 Custom Project Scores and Feedback

The table below lists the identification numbers associated with each disposition. The PA may refer to Attachment B1 for more detailed descriptions of the specific actions staff required for each application. All custom projects were scored using new metrics adopted in 2016. The metrics are shown in the Table below.

Table 3 *2016 Adopted ex ante Metrics*

Metric	2016 CPUC Adopted ex ante 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 CPUC 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 CPUC Staff for discussion in the early formative stages, before CPUC Staff review selection. In the case of tools, before widespread use in the programs. CPUC Staff expects collaboration among the utilities and for the program administrators to engage with CPUC 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** CPUC 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. CPUC 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 CPUC Staff disposition guidance in its program rules, policies, and procedures.	**12.5**	**25%**

	131		132	
Metric	**SCORE**	**CPUC Staff Specific Comments on Each Metric**	**SCORE**	**CPUC Staff Specific Comments on Each Metric**
Metric 1	**5.0**	PA uploaded initial project documentation within an acceptable timeframe.	**5.0**	PA uploaded initial project documentation within an acceptable timeframe.
Metric 2	**3.8**	Lacks a summary document for all proposed measures and savings. Documentation missing a standalone Technical Review. Also, the project was not flagged as a Prop 39 funded in the 9/19/16 CMPA Listing. However, CPUC Staff review of the CA Department of Education summary of awarded Prop 39 funding found this high school has been awarded over $3.2 million in Prop 39 funds. The PA did not address what projects these funds are allocated to.	**3.8**	Lacks a summary document for all proposed measures and savings. Documentation missing a standalone Technical Review.
Metric 3	**N/A**	This metric is scored during the final annual ESPI review for overall activities and not just on a single project basis. This project did not entail any issue that the PA should have brought to CPUC Staff attention for proactive collaboration.	**N/A**	This metric is scored during the final annual ESPI review for overall activities and not just on a single project basis. This project did not entail any issue that the PA should have brought to CPUC Staff attention for proactive collaboration.
Metric 4	**0.0**	No separate Technical Review document provided. No review of Prop 39 funding for the proposed measures. No review of ineligible scheduling measures.	**3.1**	No separate Technical Review document provided. Inconclusive as to what each measure savings and IMC values, no EUL values specified.
Metric 5	**12.5**	PA actively collaborates with CPUC Staff to address issues.	**12.5**	PA actively collaborates with CPUC Staff to address issues.

	133	
Metric	**SCORE**	**CPUC Staff Specific Comments on Each Metric**
Metric 1	**5.0**	PA uploaded initial project documentation within an acceptable timeframe.
Metric 2	**11.3**	Reasonably complete documentation. Minor inconsistency regarding onsite generation that was clarified during the 2/22/17 weekly status conference call. Provided copies of the SimCalc tool as requested. No PA Technical Review document.
Metric 3	**N/A**	This metric is scored during the final annual ESPI review for overall activities and not just on a single project basis. This project did not entail any issue that the PA should have brought to CPUC Staff attention for proactive collaboration.
Metric 4	**9.4**	No separate Technical Review document provided.
Metric 5	**12.5**	PA actively collaborates with CPUC Staff to address issues.

	144	
Metric	**SCORE**	**CPUC Staff Specific Comments on Each Metric**
Metric 1	**5.0**	PA submitted the initial project documentation on time.
Metric 2	**7.5**	Missing clarity of which submitted document contained the PA's Technical Review approving the pre-implementation ex ante savings. No documented eligibility assessment, incorrect EUL determination, missing free rider assessment that was indicated on the checklist. No clear indication that there was a QC check on the technical review. Baseline equipment and existing operations were not fully explained and documented. Pre-inspection report was only handwritten verification notes lacking sufficient detail. Interactions between measures are guesstimated and gross adjustment factor applied to account for savings uncertainty. The completion of the "Ready_For_Review_Checklist" appears to be pro-forma only. BOA calculations cited for the SAT Reset but the actual workbook was not provided.
Metric 3	**0.0**	Given the significant concern displayed by applying a 50% GRR to the central plant optimization measure and the number of the same measures in the pipeline, the PA should have brought this up during one of the weekly conference calls beforehand.
Metric 4	**6.3**	Missing clarity of which submitted document contained the PA's Technical Review approving the pre-implementation ex ante savings. No documented eligibility assessment, incorrect EUL determination, missing free rider assessment that was indicated on the checklist. No clear indication that there was a QC check on the technical review. Baseline equipment and existing operations were not fully explained and documented. Pre-inspection report was only handwritten verification notes lacking sufficient detail. Interactions between measures are guesstimated and gross adjustment factor applied to account for savings uncertainty. The completion of the "Ready_For_Review_Checklist" appears to be pro-forma only. BOA calculations cited for the SAT Reset but the actual workbook was not provided. Doesn't appear that the pre-M&V data and the eQuest modeling were scrutinized.
Metric 5	**4.1**	Pro-forma completion of the Ready for Review Checklist. Not ensuring that the application is tracked as EAR selected in their PA approval form. Oversight of implementer eligibility claims. Applying prior guidance on REA measure type EUL values.

	150		149	
Metric	**SCORE**	**CPUC Staff Specific Comments on Each Metric**	**SCORE**	**CPUC Staff Specific Comments on Each Metric**
Metric 1	**5.0**	PA uploaded initial project documentation within a reasonable timeframe.	**5.0**	The PA uploaded the initial documentation within the expected timeframe.
Metric 2	**7.5**	Somewhat complete documentation but lacking an ISP document and adequate support for the EUL claim.	**7.5**	The PA did not provide their own internal technical review of the claims and relied solely on the implementer's reports. Submitted documentation is comprehensive but lacks cohesion to minimize staff review time and searching for the relevant documents that summarize and justify the final claimed impacts.
Metric 3	**N/A**	This metric is scored during the final annual ESPI review for overall activities and not just on a single project basis. This project did not entail any issue that the PA should have brought to CPUC Staff attention for proactive collaboration.	**N/A**	This metric is scored during the final ESPI review accounting for overall activities and not on a single project.
Metric 4	**6.3**	There is no ISP supporting analysis and no support for the 20 year EUL value for low temperature freezers.	**6.3**	It is not apparent what scrutiny the PA made of the 3rd party implementer's reports and calculations. Although the PA did supply the 3rd party internal reviews for the entire Round 1 and 2 projects, CPUC Staff did not find the PA's own internal review and approval of final impacts.
Metric 5	**12.5**	PA actively collaborates with CPUC Staff to address issues.	**0.0**	The PA failed to follow the required EAR process steps and paid the customer incentives before CPUC Staff could review the findings.

	178	
Metric	**SCORE**	**CPUC Staff Specific Comments on Each Metric**
Metric 1	**5.0**	The PA uploaded the initial project documents in 14 days.
Metric 2	**3.8**	The initial project upload was a disorganized set of zipped files inside of zipped files. CPUC staff were unable to navigate the submission and found during a telephone call where the project was discussed that the PA was also unable to identify where specific documents were located in the submission. The project documents provided a good description of the proposed project. However, the initial project documents did not adequately address program influence. The documents did not have a coherent description of an M&V plan or calculation methodology and a significant amount of the data used in the baseline analysis were identified as invalid data points by the PA but not removed from the analysis.
Metric 3	**NA**	
Metric 4	**3.1**	The documents did not have a coherent description of an M&V plan or calculation methodology and a significant amount of the data used in the baseline analysis were identified as invalid data points by the PA but not removed from the analysis. The documents provide any description of how the peak demand impacts would be calculated for this project.
Metric 5	**6.3**	The PA must work on improving its QA/QC oversight of projects. For this project, CPUC Staff observed that data that were identified as invalid had not been removed from the baseline analysis for this project. The proposed post installation true-up calculation methodology and M&V plan lacked adequate detail. These types of issues can lead to unreliable and inaccurate ex ante savings claims.

	127		126	
Metric	**SCORE**	**CPUC Staff Specific Comments on Each Metric**	**SCORE**	**CPUC Staff Specific Comments on Each Metric**
Metric 1	**4.0**	21 days from notification to submission date.	**0.0**	The PA did not respond to the first disposition for 311 days. This is an unacceptable response time.
Metric 2	**5.0**	Submitted files were difficult to follow. Multiple versions of the energy model were submitted in multiple subfolders, and it was difficult to determine which model was the final official version. No summary report was found for technical QA/QC review by the PA. Problems with accuracy mostly due to choice of modeling software, but also some model input issues.	**3.8**	The PA has failed to provide any meaningful description of the labs for this project- e.g. type of labs, expected hours of operation, or the basis for key assumptions used in the analysis.
Metric 3	**NA**			NA
Metric 4	**0.0**	No report or model performed by the PA reviewer was found in the submitted files. The preponderance of issues in the modeling software indicates Q/A and Q/C on the software prior to deployment was insufficient.	**3.1**	CPUC Staff observe that the PA has made some adjustments to the assumptions used in the analysis submitted by the vendor. The basis of the submitted and revised assumptions are not documented. Additionally it is unclear how the analysis accounts for the Title 24 mandatory requirements for laboratories which should be used as the baseline for this project.
Metric 5	**6.0**	Work is needed by the PA to review projects before submission and to ensure that submissions are complete and easily reviewed.	**1.3**	The PA has not provided adequate documentation demonstrating that it has followed the Savings by Design Program rules and design which lays out a process for program influence. CPUC Staff have discussed this issue with the PA in the past and do not observe any improvement with this project.

	61		52	
Metric	**SCORE**	**CPUC Staff Specific Comments on Each Metric**	**SCORE**	**CPUC Staff Specific Comments on Each Metric**
Metric 1	**2.0**	49 days from notification to submission date.	**5.0**	PA uploaded initial project documentation within an acceptable timeframe.
Metric 2	**5.0**	Submitted files were difficult to follow. Multiple versions of the energy model were submitted in multiple subfolders, and it was difficult to determine which model was the final official version. No summary report was found for technical QA/QC review by the PA. Problems with accuracy mostly due to choice of modeling software, but also some model input issues.	**11.3**	Reasonably complete documentation but missing a standalone Technical Review.
Metric 3	**NA**		**N/A**	This metric is scored during the final annual ESPI review for overall activities and not just on a single project basis. This project did not entail any issue that the PA should have brought to CPUC Staff attention for proactive collaboration.
Metric 4	**0.0**	No report or model performed by the PA reviewer was found in the submitted files. The preponderance of issues in the modeling software indicates Q/A and Q/C on the software prior to deployment was insufficient.	**6.3**	No separate Technical Review document provided. The hourly net electric grid impact analysis did not use a single contiguous year of grid purchase data and the comparison of the overall site purchases needs to be made against both all implemented EE projects implemented during the same period including the proposed project.
Metric 5	**6.0**	Work is needed by the PA to review projects before submission and to ensure that submissions are complete and easily reviewed.	**12.5**	PA actively collaborates with CPUC Staff to address issues.

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 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

WP ID	Rev	Title	Comments	Weight	1	2	3	4	5
WPSDGENRPR0004	0	Process Fan VSD	SDG&E's adoption of SCE's workpaper indicates a general lack of internal quality control. Prior to adopting the workpaper, SDG&E should perform their own due diligence to confirm both an appropriate market and appropriate savings calculations for this measure. Additionally, the timing of SDG&E's adoption lagged behind the other PAs. On March 14th (2 weeks after the phase 1 disposition was published), SDG&E adopted the workpaper that commission staff had just disposed (SCE17PR008.0) and rejected.	1	-	no	no	-	-
WPSDGEREWP0002	6	Residential Variable Speed Swimming Pool Pump	SDG&E updated their 2017 workpaper to include information from the 2016 EM&V study. While this effort is commendable, SDG&E's only changed this applicable measure without looking at the workpaper as a whole. Further, SDG&E did not follow direction to update workpaper measures per the Phase 1 disposition.	1	-	-	-	no	-
WPSDGENRLG0106	4	Integral LED Lamps	SDG&E submitted a revised workpaper for LED lamps that complied with the Phase 1 disposition.	0.25	yes	yes	no	no	no

Workpaper Preliminary Reviews

WP ID	Rev	Title	Comments	Weight	1	2	3	4	5
WPSDGENRLG0083	0	SF_LED_Ambient_Commercial_Fixtures_and_Retrofit_Kits	SDG&E's initial submittal was generally acceptable. The EAR team noted one portion of the savings estimates that could have resulted in over-estimation of savings by up to 20%. SDG&E revised the workpaper in response to this concern and resubmitted the workpaper. Another concern is the delay in SDG&E's response to the preliminary review while it appeared the measures were being offered in its programs.	0.5	-	yes	yes	yes	Yes
WPSDGENRLG0106	5	MR16, PAR30, PAR38 and A-Type LED Lamps Retrofit	SDG&E submitted revised workpapers in a timely fashion, following the final Phase 1 review issued on May 26, 2017. The EAR team observed some inconsistencies in ex ante data and values, but these were resolved through the regular workpaper meetings with SDG&E.	1	+	no	no	no	yes

Process Adders

	1	Updates to Unreviewed Workpapers Based on Other Reviews: Initiative of the PA to examine previous workpaper preliminary reviews or dispositions and use that information to identify and update other workpapers that may have similar issues.	SDG&E has improved its efforts to keep track of other PAs' approved workpapers prior to submitting workpapers of their own that are based on those PAs' versions. As discussed in previous annual ESPI reviews, SDG&E's primary approach of adopting other PAs' workpapers leaves them vulnerable to any shortcomings in those workpapers, which will continue to negatively affect SDG&E's ESPI scores.	1	yes	yes	-	no	yes
	2	Responsiveness to Previous Direction: Efforts to update workpapers where previous direction has been provided, such as through decisions or through CPUC staff direction	SDG&E relies heavily on the workpaper development efforts of other PAs. Therefore, scores for this process section are largely based on CPUC staff judgement of other PAs' scores for workpapers.	1	-	-	yes	no	yes

3	Consideration of Standard Practice and/or Code Baselines: Efforts to research typical standard practice or code baseline where it may not be well understood. For example: What are most common applications for program VRF and mini-/multi-split HVAC systems?	SDG&E relies heavily on the workpaper development efforts of other PAs. Therefore, scores for this process section are largely based on CPUC staff judgement of other PAs' scores for workpapers.	1	yes	yes	+	no	yes
4	Data Gaps in Best Available Information: Appropriateness and adequacy of data to support savings calculations, cost or net-to-gross assumptions. For example, when energy use information about the baseline technology is not readily available, the PA should perform additional research beyond seeking opinions of a limited group of individuals.	SDG&E relies heavily on the workpaper development efforts of other PAs. Therefore, scores for this process section are largely based on CPUC staff judgement of other PAs' scores for workpapers.	1	yes	yes	no	yes	yes
5	Consistency with CPUC Policy and Existing Body of Decision Language: Ex ante values must be developed in a manner that is consistent with existing CPUC policy and all applicable decision language.	CPUC staff remains concerned that normal replacement (NR) measures are not properly consider the likely replacement technology when a user decides to replace that technology, equipment or system outside of any PA efficiency program. The predominate approach for most workpapers appears to be to select the very worst baseline that could legally be installed should that technology, equipment or system fail at a level where the only option is to replace it with something new. Many lighting measures are still defined this way.	1	no	no	no	no	-

	6	Completeness of narrative on initial review: On first review, a workpaper should include enough descriptive information so that both the delivery approach, the ex ante values, and the relationships between the two are understood by the EAR team and CPUC staff.	SDG&E submits many "short form" workpapers which reference other PAs' workpapers but describe how these measures will be incorporated into SDG&E's programs. CPUC staff generally consider SDG&E's submissions of short form workpapers as positive. SDG&E's recent submission of a revision to PG&E's LED troffer workpaper, WPSDGENRLG0083, was also well documented.	1	yes	yes	no	yes	yes

Attachment D: 2017 Ex Ante Review Annual Ratings

Custom Scoring

2017 Annual Custom Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	Dispositions Score	4.18	2.12	0.00	1.59	3.13	
Review Process Score Enhancements	Technical & Policy QC Increase	0.00	0.50	1.50	0.50	0.50	
	Implementation Increase	0.00	0.00	1.00	0.50	0.00	
Total Score	Final Metric Score (1-5)	4.19	2.63	2.50	2.60	3.64	Total Points
	Metric points	4.19	7.89	2.50	6.50	9.10	30.18

2016 Annual Custom Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	Dispositions Score	3.34	0.73	0.00	1.16	1.37	
Review Process Score Enhancements	Technical & Policy QC Increase	0.00	0.50	1.50	0.50	0.50	
	Implementation Increase	0.00	1.00	1.50	1.50	1.00	
Total Score	Final Metric Score (1-5)	3.34	2.23	3.00	3.16	2.87	Total Points
	Metric points	3.34	6.69	3.00	7.90	7.18	28.11

Workpaper Scoring

2017 Annual Workpaper Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	SDG "-"	67%	57%	67%	67%	57%	
	SDG "+"	27%	0%	0%	0%	0%	
	SDG "Yes"	7%	43%	33%	33%	43%	
	Dispositions Score %	**30%**	**21%**	**17%**	**17%**	**21%**	
	Dispositions Score	**1.50**	**1.08**	**0.84**	**0.84**	**1.08**	
Review Process Score Enhancements	SDG "-"	20%	20%	33%	0%	17%	
	SDG "+"	0%	0%	33%	0%	0%	
	SDG "Yes"	80%	80%	33%	100%	83%	
	Process Score %	**40%**	**40%**	**50%**	**50%**	**42%**	
	Process Increase Score	**2.00**	**2.00**	**2.50**	**2.50**	**2.09**	
	Process Increase Weight	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	
Total Score	**Final Metric Score (1-5)**	**2.50**	**2.08**	**2.09**	**2.09**	**2.13**	**Total Points**
	Metric points	**2.50**	**6.24**	**2.09**	**5.23**	**5.31**	**21.37**

2016 Annual Workpaper Ratings		Metric 1	Metric 2	Metric 3	Metric 4	Metric 5	
Direct Workproduct Review Score	SDG&E "-"	54%	56%	20%	25%	85%	
	SDG&E "+"	46%	0%	0%	0%	0%	
	SDG&E "Yes"	0%	44%	80%	75%	15%	
	Dispositions Score %	**46%**	**22%**	**40%**	**38%**	**8%**	
	Dispositions Score	**2.30**	**1.10**	**2.00**	**1.88**	**0.38**	
Review Process Score Enhancements	SDG&E "-"	25%	38%	43%	50%	13%	
	SDG&E "+"	0%	0%	0%	0%	13%	
	SDG&E "Yes"	75%	63%	57%	50%	75%	
	Process Score %	**38%**	**31%**	**29%**	**25%**	**50%**	
	Process Increase Score	**1.88**	**1.57**	**1.43**	**1.25**	**2.50**	
	Process Increase Weight	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	
Total Score	**Final Metric Score (1-5)**	**3.24**	**1.89**	**2.72**	**2.51**	**1.63**	**Total Points**
	Metric points	**3.24**	**5.66**	**2.72**	**6.26**	**4.08**	**21.95**

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 2017 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.