

# Commission Staff Performance Statement Report: PY 2016 Ex Post and PY 2017 Ex Ante Savings

Final October 26 2018

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## Introduction

This document describes the development of the energy savings values and corresponding incentive amounts for 2018 Energy Efficiency Savings Performance Incentive (ESPI) payment calculation for each California investor-owned utility (IOU). The energy savings in the 2018 ESPI payment has two sub-components: 1) savings that IOUs claimed for 2016 installed custom and uncertain deemed projects and measures; 2) savings that IOUs claimed for 2017 installed Not Uncertain Deemed measures.<sup>1</sup> The first two sections of the report discuss in detail the data used, and adjustments to each of these sub-components. The third section of this report provides the resultant savings values and ESPI payments.

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<sup>1</sup> [Decision D.13-09-023](#), Section 7.3 defines uncertain measures as those measures for which Commission believes the net lifetime savings of the current database of energy efficiency resources (DEER) or non-DEER savings estimate may be as much as 50% or more under or over estimated. Conversely, measures that are not believed to be uncertain (Not Uncertain Deemed measures) in terms of anticipated savings do not undergo ex-post evaluation.

On April 20, 2018 the Assigned Commissioner's Ruling was issued for the 2016 Ex-Post and 2017 Ex-Ante Savings calculations. It noted Commission contracting delays in 2017 resulting in Commission staff lacking sufficient resources to undertake impact evaluation for program year 2016.<sup>2</sup> The ruling directed Commission staff to base their analysis on the application of the most appropriate recent (i.e., 2015) evaluated results to similar measures in 2016.

Additionally, Commission staff was directed to follow the same timeline and dispute resolution process for the ex-ante savings as the timeline and process conducted for the ex-post savings, as set forth in Attachment 6 of D.13-09-023 and updated in D.15-10-028.

Historically, draft performance statements for PY+2 (ex post) was posted for comments by June 15, relying on previously published final evaluation reports. In past years the analysis of deemed not uncertain measures for PY+1 (ex ante) ESPI payment was posted after the September 1st ESPI Advice Letter filing. This year the Commission staff is releasing the PY+1 draft ex ante analysis along with the PY+2 ex post savings analysis and are subject to the same comment period.<sup>3</sup>

#### **Determination of Measures as 'Uncertain' or 'Not Uncertain'**

Commission Decision (D.) 13-09-023, requires by October 31 of each year prior to the program year, Commission staff to identify deemed measures, in the DEER or in an IOU-submitted non-DEER workpaper, for which one or more savings parameters are sufficiently uncertain that the savings claim should be subject to ex post verification to be included in the incentive payment.<sup>4</sup>

The assignment of deemed measures as 'uncertain' or 'not uncertain,' which informs the scope of the PY+1 ex ante review, is determined via the Commission staff annual release of the list of uncertain measures for each program year. The list of uncertain measures for PY 2017 was released by Commission staff for PY 2017 on December 22, 2016. The uncertain measure list for 2017 was expanded in comparison to previous program years. This expansion resulted in many measures classified as not uncertain in PY 2016 moving to be

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<sup>2</sup> Assigned Commissioner's Ruling Regarding 2016 Ex-Post and 2017 Ex-Ante Savings Efficiency Savings and Performance Incentive, in R.13-11-005, dated 20 April 2018.

<sup>3</sup> See D.15-10-028, Appendix 5, Page 4-5.

<sup>4</sup> See D.13-09- 023 Section 7.3 at page 51.

uncertain for PY 2017. For this reason, the ex ante savings for PY 2017 (PY+1) covered in this performance statement is greatly reduced from past years and the ex post saving for PY 2017 (PY+2) to be covered in next year's performance statement will be greatly increased.

### **Deviations from Original Schedule**

- Commission staff published the draft Savings Performance Statement on **June 15, 2018**.
- Commission staff, with the assistance of relevant contractors, held a conference with stakeholders by telephone to address each IOU's Savings Performance Statement on **June 29, 2018**.
- Stakeholders provided written comments identifying errors in each IOU's draft Savings Performance Statement by July 15, 2018. Southern California Edison Company (SCE), Southern California Gas (SCG) and San Diego Gas and Electric (SDG&E) submitted comments on the draft report. Response to these comments are provided in Appendix B.
- The comments disputed several aspects of the details of the data and analysis. Substantive data corrections were needed, which led Commission staff to suspend the schedule to appropriately respond to all disputed values and calculations.
- Commission staff made the necessary changes to the Draft Savings Performance Statement stimulated by the web-enabled conference and written comments and posted the Final Savings Performance Statement on a publicly accessible website and sent it to the Energy Efficiency proceeding service list(s), **October 26, 2018**.
- Within 30 days of issuance of the Final Savings Performance Statement, each utility will file an advice letter for Energy Division disposition pursuant to section 7.6.1 of General Order 96-B. The advice letter will address the ex post and ex ante savings award claim based on the Final Savings Performance Statement.

**Summary of Energy Savings Claims, Adjustments and Payments**

	PY+2 ESPI Energy Savings Payment Calculation for the 2016 Deemed Uncertain and Custom Claims as Submitted and after Adjustments*			PY+1 ESPI Energy Savings Payment Calculation for the 2017 Deemed Not Uncertain Claims as Submitted and after Adjustments*		
<b>IOU</b>	<b>IOU Claims As Submitted</b>	<b>Claims Adjustments</b>	<b>IOU Claims after adjustment</b>	<b>IOU Claims As Submitted</b>	<b>Claims Adjustments</b>	<b>IOU Claims after adjustment</b>
PG&E	\$10,376,292	(\$5,709,103)	\$4,667,189	\$1,727,317	(\$18,400)	\$1,708,917
SCE	\$8,148,432	(\$3,688,039)	\$4,460,393	\$2,130,732	(\$183,590)	\$1,947,142
SDG&E	\$3,437,360	(\$1,173,418)	\$2,263,942	\$326,774	(\$58,817)	\$267,957
SCG	\$1,682,790	(\$566,667)	\$1,116,123	\$251,523	(\$63,251)	\$188,272
<b>Total</b>	<b>\$23,644,874</b>	<b>(\$11,137,227)</b>	<b>\$12,507,647</b>	<b>\$4,436,346</b>	<b>(\$324,058)</b>	<b>\$4,112,288</b>

	PY+1 ESPI Energy Savings Payment Calculation Correction for the 2016 Deemed Not Uncertain Claims from Resolution E- 4897*		
<b>IOU</b>	<b>Payment From E-4897</b>	<b>Adjusted Payment</b>	<b>IOU Payment Adjustment</b>
PG&E	\$6,366,816	\$6,408,515	\$41,699
SCE	\$6,722,146	\$6,722,146	\$0
SDG&E	\$2,257,372	\$2,257,372	\$0
SCG	\$580,946	\$580,946	\$0
<b>Total</b>	<b>\$15,927,280</b>	<b>\$15,968,979</b>	<b>\$41,699</b>

\* All values have been rounded to the nearest dollar

## I. 2016 Claims and Modifications to the Data for the Program Year (PY)+2 ESPI Energy Savings Payment Calculation (Ex-Post Adjustment)

### A. Data Source

The data source for the 2016 custom and uncertain deemed payment calculations is developed from the IOU submitted claims data, as provided by the 2013-2015 ex post Commission evaluation team in a set of database files, referred to herein as the 2016 ESPI database files. The 2016 ESPI database files, or the “All Things Recorded” files, are listed below.<sup>5,6</sup>

- PGE\_ATR\_2016\_EART\_2018-07-29.xlsb
- SCE\_ATR\_2016\_EART\_2018-07-29.xlsb
- SCG\_ATR\_2016\_EART\_2018-07-29.xlsb
- SDGE\_ATR\_2016\_EART\_2018-07-29.xlsb

The Commission evaluation team applied 2015 (or other recent) evaluation results as documented in their three reports listed below<sup>5</sup>:

- Itron report: 2016 Ex-Post Evaluation Study for Industrial/ Agriculture/ Large Commercial (IALC) Claims.
- Itron report: 2016 Ex-Post Evaluation Study for Non-Residential Claims
- DNV-GL Memo to CPUC Energy Division Staff, dated 18 December 2017

A rolled-up summary of IOU claims, the evaluation adjustments, and the adjustments numbered 1 through 8, described in the following sub-section of this report, are contained in Section III of this report:

- 2016\_ESPI\_Custom\_And\_Uncertain\_Deemed\_Claims-ExPostAdjustment\_Summary\_2018-09-14.xlsx

Overall, the changes due to adjustments 1 through 8, as described below, reduce the statewide PY 2016 ESPI payment for ex post adjusted custom and uncertain deemed measures to \$12,503,654 compared to possible \$23,644,874 based payments on IOU ex ante claimed savings. The incentive payment is

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<sup>5</sup> The workbooks and reports are available at <http://www.cpuc.ca.gov/General.aspx?id=4137>

<sup>6</sup> The workbooks (Microsoft excel files) were corrected to remove a two decimal place precision limitation that was identified in the files posted with the draft report

reduced by approximately \$11.1 Million, with incentives related to Home Energy Reports (approximately \$1.35 Million in adjustment) deferred for future consideration.

The following sections describe additional modifications to the evaluation contractor supplied adjustments to the 2016 IOU ex ante claims found in the 2016 ESPI database files. These adjustments result in the draft 2016 ex post savings and the associated payment.

B. Adjustment 1: Apply Evaluation Contractor Proposed Ex Post Modifications (statewide ESPI payment impact: a reduction of \$6,915,912)

Commission staff has aligned measure group reclassifications in the “All Things Recorded” files developed earlier this year by Commission evaluation team to match last year’s Resolution (E-4897).

The Commission evaluation team’s 2016 ESPI adjustments are consistent with the 2015 ESPI process and are documented in detail in the “2015 Ex-Post Efficiency Savings and Performance Incentive (ESPI) Final Performance Statement Report”.<sup>7</sup>

Examination of the ex post Commission evaluation team reports and comparison to the 2016 ESPI database files indicated that some adjustments discussed in the latter two evaluation contractor reports listed above were not incorporated into the 2016 ESPI database files (the “All Things Recorded” files). All custom project and measure claim modifications (IALC, HVAC and custom lighting) and some deemed measure claims modifications (i.e., lighting, pipe insulation, HVAC maintenance) described appear to have been applied as described.

C. Adjustment 2: Removal of pre-2016 installed measures in 2016 claims, with an exception of 2015 non-small Custom Projects, (statewide ESPI payment impact: a reduction of \$1,994,536)

In general, the IOUs savings claims for custom and uncertain deemed measures installed prior to January 1, 2016 are considered ineligible for PY 2016

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<sup>7</sup> This report can be found at:

[https://pda.energydataweb.com/api/view/1887/2015\\_ExPost\\_ESPI\\_FinalPerformanceStatementReport.pdf](https://pda.energydataweb.com/api/view/1887/2015_ExPost_ESPI_FinalPerformanceStatementReport.pdf)

ESPI payments. An exception is made for custom projects that underwent extended post-installation Measurement and Verification (M&V) by the IOUs or their implementers prior to the submission of the project claim to the Commission. This is discussed below.

### **Prior Commission Guidance**

In the past, the Commission has directed the IOUs to only include savings for measures installed in the same program year (PY) for which they are claiming incentives.<sup>8</sup>

In 2017, Commission provided detailed guidance to the IOUs for filing future ESPI payment advice letters.<sup>9</sup> That guidance required reporting of all claims. However, it guided the IOUs to only claim savings towards ESPI payments for measures installed in the respective program year for which ESPI payments are being requested. The guidance required the identification of the installation year for all projects included in the claim for the program year. Additional guidance was provided to identify claims exceptions to the installation date rule. Exceptions would be considered on a case-by-case basis when sufficient documentation can show unavoidable delays in reporting. In their 2017 advice letter filings several IOUs provided extensive lists of requested exceptions.

In the PY 2015 and PY 2016 ESPI Deemed Not Uncertain measure analysis and respective payments, the claims for measures installed in the years prior to the program year were generally removed from eligibility for ESPI payments.

### **Adjustments for 2016 payments**

Generally, IOUs file final claims by May 1 of the year following the program year (PY+1), which allows three to five months for the IOU to complete the analysis and claim accounting process. If a project installation is completed by December 31 and no post installation M&V is required, IOU must file the claims by the PY+1 May 1 date. If for some projects a full year of M&V is required, then the installation date may be up to one year prior to the completion

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<sup>8</sup> The installation date-based claims rule was introduced in D.04-09-060 (at 33 and Findings of Facts 14), clarified and reiterated in D.05-04-051 (at 55, Findings of Fact 36-42, Conclusion of Law 3, Ordering Paragraph 17), D.05-09-043 (at 84) and again in Resolution G-3510 (at 13) and Resolution 4807 (OP.10).

<sup>9</sup> The report is found at <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442453614>

of M&V. This means that some claims may need to be filed in the year following the installation year when extended M&V was required. For this reason, rather than excluding all pre-2016 installed measures, the Commission is providing a general limited exception for a class of claims.

The Commission recognizes that some custom projects were subject to post-installation M&V. This IOU led M&V may have delayed the ability of the IOU to submit the claim until the M&V was completed and the savings reliably established through post-installation M&V data analysis. Most custom claims are not subject to extended M&V and many have no M&V. However, all custom claims are subject to post-installation verification and analysis.

For 2016 payments, all custom claims with installation dates during 2015 (PY-1) with a proxy incentive level above \$25,000 will be considered eligible for ESPI payments. The \$25,000 minimum proxy incentive cut-off is based on past years data revealing that custom projects below \$25,000 incentives rarely get post installation M&V and if they do, then they don't require extended claim period.

The exception of allowing projects higher than \$25,000 to claim savings has the disadvantage of allowing many claimed savings, and thus an ESPI savings payment, for projects and measures that should have been included in prior program year claims. However, the alternative of excluding all pre-2016 claims seems unreasonable.

A proxy incentive of \$/unit was used to multiply the first year gross kW, kWh and therm ex ante saving to arrive at an incentive amount. These proxy payments were calculated using \$100/kW (proxy based on typical \$/unit customer payment), \$0.10/kWh (proxy based on typical \$/unit lighting, HVAC customer payment) and \$1.00/therm (based on \$/unit historical incentive), respectively.

For future filings, custom claims must identify if a project had post installation M&V requirements and report the required M&V period to support eligibility of claims with installation dates prior to the claim program year. A reported M&V period may be rounded up to the nearest quarter (i.e., 1Q, 2Q, 3Q, 4Q).

No deemed claims for measures installed prior to the claim program year will be eligible for ESPI payments for PY 2016 or future program years.

D. Adjustment 3: Adjustment of Industrial/ Agriculture/ Large Commercial (IALC) claims to utilize 2015 Ex Post Results (statewide ESPI payment impact: a reduction of \$929,092)



For 2016 payments calculated in this ESPI statement, 2015 IALC first year and lifecycle gross realization rates are applied to the 2016 IALC claims so as to maintain consistency across the various studies and sectors.

For IALC sector, the Commission evaluation team had applied the weighted average of 2013-15 Ex Post results to the IOU 2016 claims. However, in all cases other than IALC, the Commission evaluation team had applied the 2015 evaluation results to the IOU 2016 claims in the 2016 ESPI database. .

In the table below (Table 4-3), taken from the 2015 IALC evaluation report<sup>10</sup>, a generally downward trend in gross realization rates can be observed from 2010 through 2015. Based on that downward trend, using the weighted average of 2013-2015 gross realization rates would over-estimate 2016 results. It may appear to be appropriate, for some IOUs, to extrapolate that downward trend forward to 2016 and use gross realization rates lower than those observed in 2015. However, the 2017 Ex ante Review Performance memos generally noted an improvement in IOU performance for custom projects,<sup>11</sup> we found it most appropriate to apply the 2015 gross realization rate results as a proxy to represent likely 2016 results.

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<sup>10</sup> 2015 Custom Impact Evaluation Industrial, Agricultural, and Large Commercial, Final Report, Itron, May 3, 2017

<sup>11</sup> Commission staff releases annual memos describing each IOU performance in their development of ex ante values. The memos can be found on the CPUC website “Energy Efficiency Shareholder Incentive Mechanism” page under the “Ex-Ante Review Performance” heading (<http://www.cpuc.ca.gov/general.aspx?id=4137>)

**TABLE 4-3: 2010-2012, 2013, 2014, AND 2015 WEIGHTED PROJECT REALIZATION RATES BY PA AND ENERGY METRIC (MMBTU AND KW)**

Energy Metric	2010-2012 Mean Gross Realization Rate	2010-2012 90% Confidence Interval	2013 Mean Gross Realization Rate	2013 90% Confidence Interval	2014 Mean Gross Realization Rate	2014 90% Confidence Interval	2015 Mean Gross Realization Rate	2015 90% Confidence Interval
<b>PG&amp;E LC GRR Results</b>								
MMBtu*	0.63	0.57 to 0.69	0.63	0.57 to 0.70	0.62	0.50 to 0.73	0.47	0.36 to 0.58
kW	0.46	0.35 to 0.58	0.44	0.28 to 0.61	0.74	0.34 to 1.14	0.50	0.34 to 0.67
<b>SCE LC GRR Results</b>								
MMBtu*	0.61	0.51 to 0.71	0.44	0.34 to 0.54	0.58	0.44 to 0.71	0.41	0.34 to 0.49
kW	0.57	0.47 to 0.67	0.52	0.43 to 0.62	0.46	0.34 to 0.58	0.40	0.27 to 0.52
<b>SDGE LC GRR Results</b>								
MMBtu*	0.56	0.47 to 0.66	0.49	0.40 to 0.59	0.63	0.57 to 0.70	0.47	0.4 to 0.55
kW	0.82	0.46 to 1.17	0.76	0.57 to 0.95	0.63	0.54 to 0.71	0.73	0.48 to 0.99
<b>SCG LC GRR Results</b>								
MMBtu*	0.64	0.54 to 0.75	0.60	0.48 to 0.72	0.49	0.36 to 0.62	0.51	0.38 to 0.64
<b>PG&amp;E FY GRR Results</b>								
MMBtu*	0.65	0.59 to 0.70	0.74	0.69 to 0.80	0.59	0.49 to 0.70	0.54	0.42 to 0.67
kW	0.53	0.41 to 0.66	0.54	0.37 to 0.70	0.69	0.28 to 1.10	0.64	0.46 to 0.83
<b>SCE FY GRR Results</b>								
MMBtu	0.60	0.54 to 0.67	0.54	0.43 to 0.66	0.64	0.49 to 0.78	0.55	0.47 to 0.63
kW	0.61	0.53 to 0.70	0.64	0.53 to 0.76	0.50	0.37 to 0.64	0.50	0.36 to 0.64
<b>SDGE FY GRR Results</b>								
MMBtu*	0.43	0.37 to 0.50	0.75	0.66 to 0.84	0.73	0.65 to 0.80	0.51	0.44 to 0.58
kW	0.84	0.48 to 1.19	1.02	0.88 to 1.17	0.67	0.52 to 0.81	0.77	0.52 to 1.02
<b>SCG FY GRR Results</b>								
MMBtu*	0.71	0.58 to 0.84	0.69	0.61 to 0.77	0.58	0.45 to 0.71	0.53	0.43 to 0.63

\* The sample for 2010-12 was not designed and selected based on MMBtu.

E. Adjustment 4: Adjustment of Energy Advisor Home Energy Report savings (statewide ESPI payment impact: a reduction of \$1,348,969)

We delay incentives associated with these savings claims until related ex post evaluation results are available.

PG&E, SCE and SDG&E included Home Energy Reports ex ante savings in their PY 2016 claims. These claims are for residential customer comparative energy use reporting behavior modification program. Decision 10-04-029<sup>12</sup> allows such program activities to be included in the IOU final savings determination but requires those savings to be established via ex post evaluation, and also dictates

<sup>12</sup> D.10-04-029 OP 14: Savings for behavior-based energy efficiency programs shall be credited solely on an ex post basis.

that the onus is on program providers to make the case to the utility proving the value-add.<sup>13</sup>

In previous years there have been Commission-led ex post evaluations of the program offered by all three IOUs. The past evaluation shows a variation in the savings per home as the participation levels ramp up substantially. We notice that the PG&E claims for 2016 are similar in magnitude to the savings claim in 2015. However, the SCE and SDG&E savings claims are 4-7 times larger than their 2015 program activities. This indicates that it may not be appropriate to apply 2015 results as a proxy for a possible 2016 evaluation result.

For this reason, namely the lack of Commission-led ex post evaluation results, we delay the resolution of these savings claims until a later date. These claims can be eligible as soon as an evaluation result is available. The disposition of these claims shall be resolved in next year's ESPI payment.

F. Adjustment 5: Adjustment of Energy Upgrade California claims (SCG ESPI payment impact: a reduction of \$54,437)

For the final ESPI payment calculations, Commission staff adjusted SCG's claimed gross realization rate of 253.74% to 99% to avoid double-counting across utilities. Commission staff also removed Gross Realization Rates of 2015 multi-family home upgrade program that were previously applied by Commission evaluation team towards the SoCalGas multi-family upgrade program.

DNV-GL (Commission evaluation team), in its memo to CPUC Energy Division Staff,<sup>5</sup> proposed to adjust the 2016 claims based upon 2015 evaluation report results. We find this proposal reasonable with two exceptions. Both exceptions are for the proposal for modification to SoCalGas claims for natural gas savings. One relates to natural gas savings for the home upgrade program and the other to the natural gas savings for the multi-family upgrade program.

The DNV-GL proposed adjustments for 2016 are based upon their 2015 home upgrade program and advanced home upgrade program results<sup>14</sup> listed in the two following tables from that report. In the below Home Upgrade Program results table (labeled table 45) a therm realization rate of 253.74% is listed for SoCalGas (SCG).

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<sup>13</sup> D.10-04-029 at 41.

<sup>14</sup> Final Report: 2015 Home Upgrade Program Impact Evaluation, Date: June 23, 2017 CALMAC Study ID CPU0162.01, DNV-GL

**Table 45: HUP realization rates and standard errors**

PA	kWh		kW		Therm	
	Realization Rate	Standard Error	Realization Rate	Standard Error	Realization Rate	Standard Error
BAYREN	-47.70%	0.74%	5.71%	0.99%	63.35%	0.96%
PGE	5.61%	0.45%	1.94%	0.23%	26.83%	0.42%
SCE	23.94%	0.58%	14.30%	1.24%	0.00%	0.00%
SCG	0.00%	0.00%	0.00%	0.00%	253.74%	3.92%
SDGE	-14.67%	0.53%	-2.70%	0.64%	96.98%	1.49%
SOCALREN	20.33%	0.69%	18.17%	0.55%	96.16%	1.45%

However, the 253.74% realization rate applied to the SoCalGas claims arises solely from the IOU notifying the evaluation team of SCE home upgrade projects that resulted in gas savings that were previously unreported in the SoCalGas claims. The notation in the report states “SoCalGas realization rate includes therm savings originally reported by SCE. Without these savings the SoCalGas realization rate is 99%.”

In their 2016 claims SoCalGas specifically identified gas savings from projects implemented in cooperation with SCE, PG&E, and SDG&E as well as a number of municipal utilities. The gas savings for SCE, PG&E, and SDG&E projects and those municipal utility projects are included in the SoCalGas claims so no further adjustment is required. The DNV-GL proposal applied the 253.74% gross realization rate to all the SoCalGas municipal, SCE, PGE and SDG&E and municipal utility projects included in their claims as well as also applied that realization rate to SoCalGas home upgrade single family claims. Consequently, we corrected this error and reduced the higher adjusted gross realization rate back to the SoCalGas 2015 basic 99% gross realization rate.

The second exception is for the SoCalGas multi-family upgrade program where DNV-GL applied a 61% gross realization rate from their 2015 multi-family home upgrade evaluation report<sup>15</sup>. However, that evaluation study undertook no review of any SoCalGas projects and only reviewed a small number of whole building projects for the other IOUs that were primarily electric measure implementations. Additionally, one single project involving boiler, boiler controls and steam trap replacements with steam piping insulation additions accounted for more gas savings than the rest of the entire statewide multi-family upgrade program in 2015. That project was a site with 18 boiler systems supplying over 2400 apartment units and the calculations were performed with program approved simulation software. For this reason, the Commission review

<sup>15</sup> 2015 Multifamily Focused Impact Evaluation, by DNV-GL, June 14, 2017

team requested the detailed files for that project. That review revealed calculation discrepancies that resulted in an overestimate of savings. Therefore, project savings were adjusted based on the review findings, documented in an attachment to this report.

SCG filed comments objecting to specific aspects of the multi-family home upgrade changes that were applied to a single large multi-building boiler heating system upgrade claim and the application of the resultant changes to the entire program set of claims.<sup>16</sup> In response, the adjustments to the steam trap savings for the boiler upgrade project were removed as SCG pointed out the claims values were calculated correctly. But the claim was for replaced steam traps and project invoices indicated that the traps were not replaced but rather repaired. It is unclear that repairs of steam traps, or even steam trap replacements are an eligible measure for this program, however this claim is allowed.

Going forward steam trap replacement or repairs shall require Commission staff approval prior to be included in multi-family HUP project. Additionally, the result of the single boiler system upgrade project review adjustment was not applied to any program claim other than the specific claim reviewed.

G. Adjustment 6: Reduce Negative Therm Impacts for Indoor Lighting HVAC Interactive Effects (statewide ESPI payment impact: an increase of \$14,462)

Examination of the CPUC evaluation modifications for custom lighting claims revealed that the negative therm values associated with indoor lighting claims were not adjusted when kWh gross realization rates were adjusted. The negative therm impacts should have been changed by applying the kWh gross realization rate to the therm savings (in this case reducing kWh savings in turn reduces the amount of negative therm interactive effects, resulting in lower increases in therms). This adjustment reduced the amount of negative therm for these lighting claims.

H. Adjustment 7: Allowing SCG's request for exception to claim savings for four custom projects (SCG ESPI payment impact: an increase of \$91,257)

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<sup>16</sup> SCG comments, at 4, item 6.

We make an exception for certain large IALC claims from 2015, and one claim that was reported with an incorrect installation date.

SCG requested an exception to the removal of “large” IALC custom claims with install dates prior to 2015.<sup>17</sup> The requested exception covers three claims for installations completed during 2014 and claimed in 2016. The projects with these three claims were selected for ex ante review. Therefore, post installation M&V and analysis for the projects was subject to Commission staff review and approval prior to claims submission by SCG.

Review of these specific projects indicates that SCG submitted initial post installation review documents in early 2015, yet the final savings estimates were not approved by Commission staff until 2016. During 2015, Commission staff submitted extensive feedback for improving the savings analysis methods, which were subsequently updated. For this reason, in these instances, the exception is granted.

Two of these claims are for a two-phase large new construction greenhouse incorporating the same vendor’s measures as two other SCG projects. These were subject to both ex ante and ex post review. For these, Commission staff performed the corrections and analysis that SCG did not perform.

In the third claim, for an industrial stream trap repair project, SCG took the initiative to develop a convenient analysis tool, however that tool as initially submitted failed to incorporate key assumptions directed in previous ex ante and ex post reviews. A long period elapsed before the tool was changed to incorporate the directed changes.

SCG, in their comments, also requests the adjustment for one claim that was reported with an incorrect installation date of 11/04/2014 instead of 1/27/2016.<sup>18</sup> Commission staff reviewed the details of the claim and confirms the apparent error of the installation date being set to the application date and therefore grants this correction request.

I. Adjustment 8: Adjust Total Evaluator “All Things Recorded” File Claims to Account for Measure Reclassification from Resolution E-4897 2016 ESPI PY+1 payment: (statewide ESPI payment impact: an

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<sup>17</sup> SCG comments, item 2.

<sup>18</sup> SCG comments, at 3, item 4.

increase of \$2,271,312, plus an added \$41,699 2016 PY+1 deemed payment increase for PG&E)

Commission staff has adjusted the total claims in the “All Things Recorded” evaluator files to account for measure reclassification from Resolution E-4897 2016 ESPI PY+1 payment.

SDG&E, in their comments, point out a discrepancy in the total ex ante savings claims as enumerated in the supporting 2016 Deemed Not Uncertain savings and payment calculation workbook for Resolution E-4897 versus the draft version of this report.<sup>19</sup> Investigation of this discrepancy uncovered a mismatch between the measure classifications (deemed uncertain, deemed not uncertain, custom, and those not eligible for ESPI payments such as Low-Income Program savings).

1. The Resolution E-4897 analysis provided measure classifications that differed from those in the evaluation ATR files. The Resolution E-4897 analysis incorrectly included the Low-Income Program (ESAP) savings classified as custom.
2. The “All Things Recorded” files have a substantial number of deemed uncertain measures incorrectly classified as deemed not uncertain, which thus excluded the savings from the proposed payments for the PY+2 analysis. These measures and their savings, unaltered from the IOU ex ante claims, were added back into the payment calculation in this adjustment.
3. The “All Things Recorded” files also include a number of deemed not uncertain measures, previously included in the Resolution E-4897 payment, classified as deemed uncertain and included in the PY+2 payment. Those measures and their savings, as adjusted for ex post results when applicable, were removed from the payment calculation in this adjustment.
4. Both the Resolution E-4897 analysis and the “All Things Recorded” files incorrectly included SCE Residential Energy Advisor Program HER claims as deemed uncertain. As payments for these claims is deferred no adjustment of savings for payments is required, however the Resolution E-4897 classification of these claims was revised while the “All Things Recorded” files were unchanged. Details of the calculations for this

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<sup>19</sup> SDG&E comments, at 1, item 1.A.1.



adjustment are found in a supporting documentation workbook included with this report<sup>20</sup>.

5. SDG&E comments regarding the lifetime savings calculation used for accelerated replacement claims in the 2017 deemed not uncertain payment calculation, discussed below in Section II subsection A, identified an error that was also present in the Resolution E-4897 analysis workbook. This correction was made to the Resolution E-4897 analysis workbook, and did not result in any changes to the program administrators' 2016 deemed payment calculations.
6. While reviewing the supporting analysis workbooks for Resolution E-4897, CPUC staff reclassified additional measures from uncertain to certain, which resulted in a small increase in savings for PG&E. A positive adjustment is included in this year's ESPI payment to PG&E to reflect this correction to the Resolution E-4897 Deemed Not Uncertain analysis workbook.

The classification changes made to claims as noted above, and the details of the correction to the savings and payment values, are found in the following workbook available on the Commission's ESPI webpage<sup>5</sup>:

2016EDCSreclassificationsForResolutionE-  
4897(AsUpdated)ComparedTo2017ATRs\_14Sep2018.xlsx

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<sup>20</sup> 2016EDCSreclassificationsForResolutionE-  
4897(AsUpdated)ComparedTo2017ATRs\_14Sep2018.xlsx



## II. 2017 Claims and Modifications to the Data for the PY+1 ESPI Energy Savings Payment Calculation

### A. Data Source

The 2017 deemed payment calculation is developed from the following two sources:

- The California Energy Data and Reporting System (CEDARS): This is the source of all annual reported claims and includes all of the ex ante values for unit energy savings, costs, effective useful life, remaining useful life, net-to-gross (net to gross) ratios and installation rates.
- Energy Division Central Server: Some of claim properties necessary for the calculation of ESPI payments are not currently reported in the CEDARS data. Commission staff retrieved these values for each individual claim reported in CEDARS, from the raw claims data stored in the Energy Division Central Server claims database. Values retrieved from the central server include measure application type (accelerated replacement, normal replacement, retrofit add-on, etc.), DEER building type, Title 24 climate zone, sector, type of measure (deemed versus custom) and delivery information (such as upstream or downstream).

A rolled-up summary of IOU claims and the adjustments numbered 9, 10 and 11, described in the following sub-sections of this report, are contained in Section III of this report. A workbook containing all the calculation details performed on a measure level rollup of the 2017 IOU claims is provided as a supporting file to this report<sup>21</sup>:

SDG&E in their comments on the draft report noted an issue with the calculation of lifetime savings for accelerated replacement measures.<sup>22</sup> The lifetime savings for some intermediate calculations was calculated using incorrect values for effective useful life. This issue was investigated, identified and corrected. The correction is included in the above listed workbook and all savings calculations in this report include that correction.

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<sup>21</sup> 2017\_ESPI\_NotUncertainDeemed-Adjustment\_Summary\_25Sep2018.xlsx

<sup>22</sup> SDG&E comments, at 4, item II.

Overall, the changes due to adjustments 9, 10 and 11, as described below, reduce the statewide PY 2017 ESPI payment for the Not Uncertain Deemed measures by \$324,058 compared to a payment of \$4,436,346 without Commission ex ante review.

B. Observations of Claims Data

For 2017 the total deemed payment will be much smaller than previous years due to most measure groups with high portfolio contributions being on the 2017 uncertain measure list. Therefore, many ex ante adjustments applied in previous years would only create very small decreases in total payments for 2017.

C. Adjustment 9: Application of Accelerated Replacement, Normal Replacement, Add-On Equipment, and Behavioral, Retrocommissioning and Operational policy (statewide ESPI payment impact: a reduction of \$171,448)

1. Commission staff adjusted remaining useful life values consistent with the Database of Energy Efficiency Resources (DEER) requirements<sup>23</sup>. Some equipment replacement measures claimed savings above an existing baseline but were not identified as early retirement and so were claiming the first period savings for the entire effective useful life (EUL in workbooks). We revise these savings to be early retirement and apply the correct remaining useful life.
2. We also revise add-on equipment measures so that the effective useful life of the measure is equal to the lower of the remaining useful life (RUL in workbooks) of the modified system or equipment, or the effective useful life of the add-on component. For measures identified as add-on equipment, these values were updated across all program administrator claims for consistency.
3. Commission staff identified some measures that fall into the behavioral, retro-commissioning and operational measure application type and

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<sup>23</sup> E-4818 revised nomenclature for measure application types. "Early replacement" was changed to "accelerated replacement"; "Replace-on-burnout" was changed to "normal replacement"; "Retrofit add-on" was changed to "add-on equipment". E-4818 also added the new measure application type of "behavioral, retro-commissioning and operational".

revised the effective useful life for these measures to be no more than three years<sup>24</sup>. Examples of these measures are steam trap replacements and pump overhauls.

4. Additional corrections include misclassified measures such as early retirement or replace-on-burnout measures identified as add-on equipment. Commission staff also observe some normal replacement measures where the claimed effective useful life are lower than the DEER effective useful life, and revise them to higher values. This results in a slight increase to payments for PG&E.

D. Adjustment 10: Removal of pre-2017 installed measures in 2017 claims policy (statewide ESPI payment impact: a reduction of \$146,239)

Commission staff has excluded savings for measures with installation dates prior to January 1, 2017.

Prior Commission decisions have directed IOUs to only include savings for measures installed in the same year for which they are claiming incentives.<sup>25</sup> The IOUs were also directed to identify the small percentage of projects installed in a separate year than the claim year and to provide sufficient documentation supporting the delay in reporting of such projects for the Commission to decide on a case by case basis.

The IOUs generally complied with these directions in their 2018 submissions. However, consistent with prior Commission direction, we exclude savings for measures with installation dates, identified in the official claims in the IOUs' quarterly data submissions, prior to January 1, 2017.

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<sup>24</sup> E-4818 OP 2: We direct the Program Administrators to ensure that all program activities and installations resulting in performance that does not exceed the nominal efficiency (i.e., rated, intended, or original efficiency) of the pre-existing condition are offered through a behavioral, retrocommissioning or operational program framework, with an effective useful life not to exceed three years.

<sup>25</sup> The annual installation date-based claims requirement was introduced in D.04-09-060 (at 33 and Findings of Facts 14), clarified and reiterated in D.05-04-051 (at 55, Findings of Fact 36-42, Conclusion of Law 3, Ordering Paragraph 17), D.05-09-043 (at 84) and again in Resolution G-3510 (at 13) and Resolution 4807 (OP.10).

E. Adjustment 11: Proper application of net-to-gross values  
(statewide ESPI payment impact: a reduction of \$7,376)

Commission staff made one correction to net to gross values where SCG had claimed an incorrect value for attic and ceiling insulation in residential buildings.

F. Observation 1: Proper application of net-to-gross values (no  
payment adjustments)

The review of claimed net to gross values in this, and the previous two years, has focused on four net to gross assignments that carry special Commission directed prerequisites: hard-to-reach, emerging technology, locational (or constrained area), and K-12 schools and community college measures. Each of these categories have “locked down” net to gross values of 0.85.

Emerging technology net to gross claims are required to be approved through the workpaper review process. In past years, Commission staff has revised the reported net to gross values to the standard DEER values where the measure technology had been in program offerings for more than four years, or if any IOU was claiming the same measure but using the standard DEER value.

Locational targeted programs serving transmission, distribution, or generation constrained areas may claim a net to gross value of 0.85; however, customer incentives must also be “the higher of 75% of incremental measure cost, or what is available under prior policies.”<sup>26</sup> In previous years, Commission staff observed very little targeting identified by an increase in the incentives for measures in constrained areas as compared to identical measures offered across the service area.

One problem with identifying targeted measure is that the IOUs often report additional incentives for those measures as “kicker” incentives that include an incentive payment but no saving claims. Commission staff cannot identify any explicit connections between the kicker incentive claim records and the claim records containing the measure description and energy savings parameters. Therefore, it is not possible to verify that the combination of the kicker incentives records plus the measure savings records meet the requirements for additional incentives in constrained areas.

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<sup>26</sup> D.14-10-046, OP 9

This identification problem has been discussed in previous two ESPI payment Resolutions<sup>27</sup>, and the IOUs were directed to provide data that allows identification of net to gross values that are larger than the standard DEER values, such as for schools, hard-to-reach, or Emerging Technology measures. For 2017, CPUC staff observed that all high net to gross claims were supported by a “net to gross ID” input that identified the category of that claim (emerging technology, constrained area, hard-to-reach, K-12 schools and community colleges). This does not solve the problem of connecting multiple claim records, such as kicker and measure savings records, together.

Commission staff expects the IOUs to solve this problem in post-2016 claims. One solution is to assign and include unique project IDs, in a similar manner as directed for custom projects in D.11-07-030<sup>28</sup>, in all claims so that all records associated with a project can be identified as part of a claim multi-record submission that project.

G. Observation 2: Proper application of Commission direction for schools that allows only above code measures to be claimed (no payment adjustments)

IOUs are allowed to claim K-12 schools and community college measures and projects (schools projects) as accelerated replacement, including any savings from the pre-existing equipment to the minimum code requirements, but only if the project meets the Commission policy requirements including preponderance of evidence that the IOU program caused the acceleration.<sup>29</sup> Staff points out that it is not reasonable to assume that an IOU’s program influenced the accelerated replacement if the project received most of its support from Prop 39 funds and the amount of that funding greatly exceeded the IOU’s provided incentive.

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<sup>27</sup> E-4807 (pg 13-14) and E-4897 (pg 13-14)

<sup>28</sup> D.11-070-30, Attachment B, at B3. “Each project should be assigned a unique identifier that shall not be re-used or re-assigned to other projects.”

<sup>29</sup> D.12-05-015 at 347, “We direct Staff to update and distribute to the service list of this proceeding Appendix 1 of Attachment B to D.11-07-030, to incorporate clarifications provided here regarding baseline for gross savings estimates, and to indicate that a preponderance of evidence on the motivation for equipment replacement shall be utilized to determine which of the two baseline alternatives is applied for all gross savings estimates.”

Additionally, school projects must exceed code requirements to be eligible for IOU incentives.<sup>30</sup>

At this time, we have not made any adjustment to these claims. However, we require that going forward IOUs review any proposed early retirement claims for school projects to identify projects with predominant Prop 39 funding. Absent a preponderance of evidence that the IOU program activity caused the project rather than the reliance on Prop 39 funds to allow the project to proceed, the IOU should remove the to-code savings from those claims and report those projects as normal replacement rather than accelerated.<sup>31</sup>

In addition to those projects having California Proposition 39 (Prop 39) funding, all K-12 schools and community college measures and projects should be specifically identified in the claims.

H. Observation 3: Proper assignment of behavioral, retro-commissioning and operational measure application types (no payment adjustments)

Resolution E-4818 directs program administrators to claim all measures with a baseline efficiency below the nominal efficiency of the pre-existing condition as behavioral, retrocommissioning and operational measures with an effective useful life of three years or less<sup>32</sup>. There are measures currently offered throughout the program administrators' programs with savings claimed above a degraded baseline or a baseline that assumes less than code required performance. Examples of these measures are HVAC quality maintenance and industrial and agricultural pump overhauls. These measures involve treatments to existing equipment whose performance has degraded over time from its performance at the time it was first installed. So CPUC staff ensured that the

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<sup>30</sup> Decision 14-10-046 OP.9 states "For all projects undertaken by schools" that "The only eligible measures are those that are above code."

<sup>31</sup> See E-4897 at 17

<sup>32</sup> E-4818 OP 2. "We direct the Program Administrators to ensure that all program activities and installations resulting in performance that does not exceed the nominal efficiency (i.e., rated, intended, or original efficiency) of the pre-existing condition are offered through a behavioral, retrocommissioning or operational program framework, with an effective useful life not to exceed three years."

effective useful life values for all such measures was adjusted to three years as part of Adjustment 9 described above.

For some measures, claims do not contain enough information for CPUC staff to determine if effective useful life requirements for behavioral, retrocommissioning and operational measures should apply. An example of this is door closers for walk-in coolers and freezers. If the host cooler does not already have a door closer, then the measure has an application type of add-on equipment and the effective useful life is the remaining useful life of the cooler or freezer.

CPUC staff observed some claims filed with a measure application type of replace-on-burnout replaced with normal replacement by Resolution E-4818), but replace-on-burnout requires a standard practice baseline and cannot assume a degraded baseline from originally installed conditions. For this resolution, CPUC staff ensured that all measures of this type were assigned an effective useful life that is consistent with an add-on equipment measure application type (see Adjustment 9 described above). Moving forward, program administrators shall provide adequate information in both workpapers and claims to support the claimed measure application type.

Details of the correction to the 2017 ex ante savings and payment values, are found in the following workbooks available on the Commission's ESPI webpage<sup>5</sup>:

2017\_ESPI\_NotUncertainDeemed-Adjustment\_Summary\_25Sep2018.xlsx

### III. 2016 PY+2 Ex Post and 2017 PY+1 Ex Ante ESPI Energy Savings and Estimated Payment Calculation

#### A. Savings IOU Values Claims and Ex Post Adjustments and ESPI Payment Calculation for 2016 Custom and Uncertain Deemed Measures.

The below payments are calculated using \$7,670 \$/MW, \$2,411 \$/GWH and \$26,048 /mmTherm.

IOU 2016 Ex Ante Claims as Submitted for Custom and Uncertain Deemed Projects and Measures Compiled into the Evaluation ATR Files																
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects			
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	
PGE	77.11	400.57	12.30	61.38	324.69	9.65	522.24	2,753.98	92.67	376.16	1,984.05	63.06	402.27	2,121.75	67.70	
SCE	58.44	309.62	0.98	40.15	215.80	0.54	509.29	2,787.16	11.90	323.22	1,853.22	6.32	348.68	1,992.58		
SDGE	39.86	72.87	2.08	36.40	53.52	1.46	158.27	648.77	17.74	112.61	407.05	10.39	120.53	439.49	11.27	
SCG	4.04	5.49	10.11	3.06	3.76	5.39	48.01	68.37	103.43	34.62	43.19	58.29			63.46	
<b>Total</b>	<b>179.45</b>	<b>788.55</b>	<b>25.48</b>	<b>140.99</b>	<b>597.77</b>	<b>17.04</b>	<b>1,237.81</b>	<b>6,258.29</b>	<b>225.75</b>	<b>846.62</b>	<b>4,287.50</b>	<b>138.06</b>	<b>871.48</b>	<b>4,553.81</b>	<b>142.43</b>	

ESPI Payment From 2016 Ex Ante Custom and Uncertain Deemed Submission Compiled into the Evaluation ATR Files		
PA	IOU Claims As Submitted	Percent of Ex Ante
PGE	\$9,964,355	100%
SCE	\$7,478,503	100%
SDGE	\$2,277,733	100%
SCG	\$1,652,971	100%
<b>Total</b>	<b>\$21,373,562</b>	<b>100%</b>

Adjustment 8: Adjust ATR savings value to take into account the ESPI measure category reclassification from Resolution E-4897 (2016 ESPI PY+1 payments) that moved measure between deemed not uncertain, deemed uncertain and custom where such reclassification were not all implemented into the evaluation ATR files																
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects			
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	
PGE	10.16	24.19	-0.38	6.83	15.88	-0.23	56.07	130.90	-4.56	34.10	78.72	-2.72	36.90	85.27	-2.94	
SCE	10.12	33.31	-0.08	5.26	17.75	-0.05	74.83	241.20	-0.49	39.31	128.85	-0.28	43.05	140.91		
SDGE	7.76	30.75	0.55	4.99	19.34	0.30	91.39	361.01	5.40	58.79	227.35	2.88	63.36	245.40	3.15	
SCG	-2.31	-2.09	0.21	-1.96	-1.78	0.07	-13.85	-12.55	2.37	-11.77	-10.67	1.03			1.14	
<b>Total</b>	<b>25.74</b>	<b>86.16</b>	<b>0.30</b>	<b>15.11</b>	<b>51.20</b>	<b>0.09</b>	<b>208.44</b>	<b>720.55</b>	<b>2.73</b>	<b>120.43</b>	<b>424.25</b>	<b>0.91</b>	<b>143.31</b>	<b>471.58</b>	<b>1.35</b>	

ESPI Ex Post Payment Adjustment 8		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	\$411,937	4.1%
SCE	\$669,929	9.0%
SDGE	\$1,159,627	50.9%
SCG	\$29,819	1.8%
<b>Total</b>	<b>\$2,271,312</b>	<b>10.6%</b>

IOU 2016 Ex Ante Claims as Submitted for Custom and Uncertain Deemed Projects and Measures Compiled into the Evaluation ATR Files Including Adjustments of Measure classifications from Resolution E-4897																
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects			
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	
PGE	87.27	424.76	11.92	68.21	340.57	9.42	578.31	2,884.88	88.11	410.26	2,062.77	60.35	439.17	2,207.01	64.75	
SCE	68.56	342.92	0.90	45.41	233.54	0.49	584.13	3,028.36	11.41	362.53	1,982.07	6.04	391.73	2,133.49	0.00	
SDGE	47.63	103.62	2.64	41.39	72.87	1.75	249.65	1,009.78	23.15	171.41	634.40	13.26	183.89	684.89	14.42	
SCG	1.73	3.40	10.32	1.09	1.98	5.47	34.16	55.82	105.80	22.85	32.52	59.31	0.00	0.00	64.60	
<b>Total</b>	<b>205.19</b>	<b>874.71</b>	<b>25.78</b>	<b>156.10</b>	<b>648.97</b>	<b>17.13</b>	<b>1,446.25</b>	<b>6,978.84</b>	<b>228.47</b>	<b>967.04</b>	<b>4,711.76</b>	<b>138.97</b>	<b>1,014.80</b>	<b>5,025.39</b>	<b>143.78</b>	

ESPI Payment From 2016 Ex Ante Custom and Uncertain Deemed		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	\$10,376,292	104.1%
SCE	\$8,148,432	109.0%
SDGE	\$3,437,360	150.9%
SCG	\$1,682,790	101.8%
<b>Total</b>	<b>\$23,644,874</b>	<b>110.6%</b>



2016 Ex Post and 2017 Ex Ante  
Performance Statement Report

**Adjustment 1: Apply All Initial Ex Post Adjustments as Compiled into the Evaluation ATR Files**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE	-3.20	-28.56	-1.34	-4.73	-48.68	-1.66	-98.61	-626.36	-19.88	-109.35	-749.77	-21.00	-114.28	-781.09	-21.99
SCE	-6.16	-50.56	-0.37	-5.03	-50.10	-0.20	-112.39	-729.74	-5.30	-95.68	-703.31	-2.75	-101.30	-739.80	
SDGE	-0.22	-8.17	-0.30	-0.34	-6.56	-0.20	-35.27	-208.43	-4.39	-27.52	-147.02	-2.89	-29.29	-157.44	-3.11
SCG	-0.47	-0.37	-2.20	-0.40	-0.32	-0.60	-13.55	-6.04	-25.34	-11.50	-5.15	-11.69			-12.96
<b>Total</b>	<b>-10.05</b>	<b>-87.66</b>	<b>-4.21</b>	<b>-10.50</b>	<b>-105.67</b>	<b>-2.65</b>	<b>-259.82</b>	<b>-1,570.57</b>	<b>-54.91</b>	<b>-244.05</b>	<b>-1,605.24</b>	<b>-38.33</b>	<b>-244.87</b>	<b>-1,678.33</b>	<b>-38.06</b>

ESPI Ex Post Payment Adjustment 1		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	-\$3,332,609	-33.4%
SCE	-\$2,560,626	-34.2%
SDGE	-\$685,173	-30.1%
SCG	-\$337,504	-20.4%
<b>Total</b>	<b>-\$6,915,912</b>	<b>-32.4%</b>

**Adjustment 2: Remove Pre-2016 Installation Except 2015 non-small Custom from Total with All Ex Post Adjustments Applied**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE	-4.71	-23.26	-1.23	-2.60	-12.69	-0.67	-66.29	-284.05	-16.12	-36.77	-155.61	-8.82	-40.08	-169.81	-9.63
SCE	-6.80	-38.85	-0.09	-4.01	-21.64	-0.05	-52.81	-323.99	-0.49	-30.20	-179.27	-0.29	-32.84	-195.47	
SDGE	-0.36	-1.07	-0.04	-0.19	-0.56	-0.02	-5.76	-14.50	-0.60	-3.08	-7.64	-0.32	-3.37	-8.37	-0.35
SCG	-0.04	-0.02	-2.30	-0.02	-0.01	-1.40	-0.64	-0.23	-14.89	-0.36	-0.13	-8.80			-9.54
<b>Total</b>	<b>-11.91</b>	<b>-63.19</b>	<b>-3.67</b>	<b>-6.83</b>	<b>-34.89</b>	<b>-2.15</b>	<b>-125.49</b>	<b>-622.77</b>	<b>-32.10</b>	<b>-70.40</b>	<b>-342.65</b>	<b>-18.24</b>	<b>-76.29</b>	<b>-373.64</b>	<b>-19.52</b>

ESPI Ex Post Payment Adjustment 2		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	-\$967,585	-9.7%
SCE	-\$723,144	-9.7%
SDGE	-\$55,234	-2.4%
SCG	-\$248,573	-15.0%
<b>Total</b>	<b>-\$1,994,536</b>	<b>-9.3%</b>

**Adjustment 3: Convert Ex Post IALC 2016 and 2015 non-small custom Installations Portion to 2015 GRR (this is added to total with all ex post adjustments applied and pre-2016 installations removed except 2015 non-small custom)**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE	-1.50	-16.32	-0.60	-0.81	-8.81	-0.32	-36.56	-219.42	-8.60	-19.74	-118.49	-4.64	-21.57	-129.46	-5.07
SCE	-0.73	-2.33	-0.01	-0.39	-1.24	0.00	-14.24	-82.86	-0.43	-7.55	-43.92	-0.23	-8.26	-48.06	
SDGE	-0.07	-4.40	-0.21	-0.04	-2.33	-0.11	-3.91	-51.36	-2.22	-2.07	-27.22	-1.17	-2.27	-29.79	-1.28
SCG	0.00	0.00	-0.47	0.00	0.00	-0.30	0.00	0.00	-0.98	0.00	0.00	-0.62			-0.67
<b>Total</b>	<b>-2.30</b>	<b>-23.05</b>	<b>-1.29</b>	<b>-1.23</b>	<b>-12.38</b>	<b>-0.73</b>	<b>-54.72</b>	<b>-353.65</b>	<b>-12.23</b>	<b>-29.36</b>	<b>-189.63</b>	<b>-6.66</b>	<b>-32.10</b>	<b>-207.31</b>	<b>-7.03</b>

ESPI Ex Post Payment Adjustment 3		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	-\$609,754	-6.1%
SCE	-\$179,232	-2.4%
SDGE	-\$122,696	-5.4%
SCG	-\$17,410	-1.1%
<b>Total</b>	<b>-\$929,092</b>	<b>-4.3%</b>

**Adjustment 4: Remove Home Energy Reports to allow ex post evaluation during 2018 for payment in 2019 (this is added to total with all ex post adjustments applied)**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE	-31.74	-165.75	-4.53	-31.74	-162.77	-4.53	-31.74	-179.05	-4.53	-31.74	-170.12	-4.53	-33.32	-179.07	-4.76
SCE	-12.22	-50.96	0.00	-12.22	-50.96	0.00	-12.22	-50.96	0.00	-12.22	-50.96	0.00	-12.83	-53.51	
SDGE	-29.53	-21.65	-0.65	-29.53	-21.65	-0.65	-29.53	-21.65	-0.65	-29.53	-21.65	-0.65	-31.00	-22.74	-0.68
SCG															
<b>Total</b>	<b>-73.48</b>	<b>-238.37</b>	<b>-5.18</b>	<b>-73.48</b>	<b>-235.39</b>	<b>-5.18</b>	<b>-73.48</b>	<b>-251.67</b>	<b>-5.18</b>	<b>-73.48</b>	<b>-242.73</b>	<b>-5.18</b>	<b>-77.15</b>	<b>-255.32</b>	<b>-5.44</b>

ESPI Ex Post Payment Adjustment 4		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	-\$811,259	-8.1%
SCE	-\$227,387	-3.0%
SDGE	-\$310,323	-13.6%
SCG	\$0	0.0%
<b>Total</b>	<b>-\$1,348,969</b>	<b>-6.3%</b>

2016 Ex Post and 2017 Ex Ante Performance Statement Report

**Adjustment 5: Adjust SoCalGas EUC SF GRR and one Multi-Family claim (this is added to total with all ex post adjustments applied)**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE															
SCE															
SDGE															
SCG			-0.10			-0.07			-3.42			-1.92			-2.09
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>-0.10</b>	<b>0.00</b>	<b>0.00</b>	<b>-0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>-3.42</b>	<b>0.00</b>	<b>0.00</b>	<b>-1.92</b>	<b>0.00</b>	<b>0.00</b>	<b>-2.09</b>

**ESPI Ex Post Payment Adjustment 5**

PA	EAR Team Adjustment	Percent of Ex Ante
PGE	\$0	0.0%
SCE	\$0	0.0%
SDGE	\$0	0.0%
SCG	-\$54,437	-3.3%
<b>Total</b>	<b>-\$54,437</b>	<b>-0.3%</b>

**Adjustment 6: Correct Ex Post adjustment for 2016 and 2015 non-small installed custom indoor lighting projects/measure negative them where the GRR/NRR adjustments for kWh was not applied to the negative them thus leaving those values too high (this is added to total with all ex post adjustments applied with pre-2016 non-small custom installs removed)**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE			0.02			0.06			0.12			0.46			0.46
SCE			0.01			0.01			0.03			0.09			0.09
SDGE			0.00			0.00			0.00			0.00			0.00
SCG															
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>0.00</b>	<b>0.00</b>	<b>0.07</b>	<b>0.00</b>	<b>0.00</b>	<b>0.15</b>	<b>0.00</b>	<b>0.00</b>	<b>0.55</b>	<b>0.00</b>	<b>0.00</b>	<b>0.56</b>

**ESPI Ex Post Payment Adjustment 6**

PA	EAR Team Adjustment	Percent of Ex Ante
PGE	\$12,104	0.1%
SCE	\$2,350	0.0%
SDGE	\$8	0.0%
SCG	\$0	0.0%
<b>Total</b>	<b>\$14,462</b>	<b>0.1%</b>

**Adjustment 7: Adjust SoCalGas IALC claims to add back in the three claims for 2014 install which were selected for ex ante review and the final ex ante values were not approved until 2016**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE															
SCE															
SDGE															
SCG			1.43			0.90			5.15			3.25			3.50
<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>1.43</b>	<b>0.00</b>	<b>0.00</b>	<b>0.90</b>	<b>0.00</b>	<b>0.00</b>	<b>5.15</b>	<b>0.00</b>	<b>0.00</b>	<b>3.25</b>	<b>0.00</b>	<b>0.00</b>	<b>3.50</b>

**ESPI Ex Post Payment Adjustment 7**

PA	EAR Team Adjustment	Percent of Ex Ante
PGE	\$0	0.0%
SCE	\$0	0.0%
SDGE	\$0	0.0%
SCG	\$91,257	5.5%
<b>Total</b>	<b>\$91,257</b>	<b>0.4%</b>

**Adjustment to Ex Post Savings Applying Ex Post Adjustments 1-8 to 2016 IOU Ex Ante Claims for Custom and Uncertain Deemed Projects and Measures Compiled into the Evaluation ATR Files**

PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm
PGE	-41.15	-233.89	-7.68	-39.88	-232.95	-7.13	-233.20	-1,308.89	-49.01	-197.59	-1,193.98	-38.54	-209.25	-1,259.43	-40.99
SCE	-25.91	-142.70	-0.46	-21.64	-123.94	-0.25	-191.65	-1,187.55	-6.18	-145.64	-977.46	-3.19	-155.23	-1,036.83	0.09
SDGE	-30.17	-35.29	-1.19	-30.10	-31.11	-0.98	-74.46	-295.94	-7.86	-62.20	-203.54	-5.03	-65.93	-218.34	-5.43
SCG	-0.51	-0.39	-3.64	-0.42	-0.33	-1.46	-14.18	-6.27	-39.48	-11.86	-5.28	-19.78	0.00	0.00	-21.75
<b>Total</b>	<b>-97.73</b>	<b>-412.27</b>	<b>-12.98</b>	<b>-92.04</b>	<b>-388.33</b>	<b>-9.82</b>	<b>-513.50</b>	<b>-2,798.66</b>	<b>-102.54</b>	<b>-417.30</b>	<b>-2,380.25</b>	<b>-66.54</b>	<b>-430.41</b>	<b>-2,514.60</b>	<b>-68.08</b>

**ESPI Payment For Ex Post Adjusted 2016 Ex Ante Submission in ATRs**

PA	IOU Claims As Submitted	Percent of Ex Ante
PGE	-\$5,709,103	-57.3%
SCE	-\$3,688,039	-49.3%
SDGE	-\$1,173,418	-51.5%
SCG	-\$566,667	-34.3%
<b>Total</b>	<b>-\$11,137,227</b>	<b>-52.1%</b>

2016 Ex Post and 2017 Ex Ante  
Performance Statement Report

Ex Post Savings Applying Ex Post Adjustments 1-8 to 2016 IOU Ex Ante Claims for Custom and Uncertain Deemed Projects and Measures																ESPI Payment For Ex Post Adjusted 2016 Ex Ante Submission		
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects			PA	AppORTioned Payment	Percent of Ex Ante
	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm	mW	gWh	mmtherm			
PGE	46.12	190.87	4.23	28.34	107.62	2.29	345.10	1,575.99	39.10	212.67	868.78	21.81	229.92	947.58	23.77	PGE	\$4,667,189	46.8%
SCE	42.65	200.22	0.44	23.77	109.61	0.25	392.48	1,840.81	5.23	216.88	1,004.61	2.85	236.51	1,096.65	0.09	SCE	\$4,460,393	59.6%
SDGE	17.46	68.34	1.44	11.29	41.75	0.77	175.19	713.84	15.29	109.20	430.86	8.23	117.96	466.55	8.99	SDGE	\$2,263,942	99.4%
SCG	1.21	3.01	6.68	0.67	1.66	4.01	19.98	49.55	66.32	10.99	27.24	39.53	0.00	0.00	42.85	SCG	\$1,116,123	67.5%
<b>Total</b>	<b>107.45</b>	<b>462.44</b>	<b>12.80</b>	<b>64.07</b>	<b>260.64</b>	<b>7.32</b>	<b>932.75</b>	<b>4,180.19</b>	<b>125.94</b>	<b>549.74</b>	<b>2,331.50</b>	<b>72.43</b>	<b>584.39</b>	<b>2,510.79</b>	<b>75.70</b>	<b>Total</b>	<b>\$12,507,647</b>	<b>58.5%</b>

B. IOU Savings Claims, Ex Ante Adjustments and ESPI Payment Calculation for 2017 Not Uncertain

Deemed measures.

The below payments are calculated using \$7,549 \$/MW, \$2,368 \$/GWH and \$25,106 \$/mmTherm as a placeholder for the 2017 values. Values listed for individual adjustments 9-11 below are for only that adjustment applied excluding interactions between the adjustments that reduce the values when all adjustments are applied together as listed in the combined adjustment table.

IOU 2017 Ex Ante Claims as Submitted for Deemed Not UnCertain Measures															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	84.67	28.95	1.23	49.75	17.18	0.74	549.47	174.40	6.02	310.45	100.76	3.71	337.92	109.48	4.01
SCE	110.68	21.45	-1.01	83.30	15.16	-0.88	685.52	164.82	-3.63	485.17	111.07	-3.12	519.45	119.31	
SDGE	22.66	3.04	0.35	15.42	2.05	0.18	122.89	17.35	0.95	86.94	11.87	0.36	93.09	12.73	0.41
SCG	0.56	0.25	2.28	0.31	0.11	1.40	5.59	4.98	15.61	2.76	2.14	9.24			10.02
<b>Total</b>	<b>218.57</b>	<b>53.69</b>	<b>2.85</b>	<b>148.78</b>	<b>34.50</b>	<b>1.44</b>	<b>1,363.48</b>	<b>361.55</b>	<b>18.95</b>	<b>885.33</b>	<b>225.84</b>	<b>10.18</b>	<b>950.46</b>	<b>241.53</b>	<b>14.43</b>

ESPI Payment From 2017 Ex Ante		
PA	IOU Claims As Submitted	Percent of Ex Ante
PGE	\$1,727,317	100.0%
SCE	\$2,130,732	100.0%
SDGE	\$326,774	100.0%
SCG	\$251,523	100.0%
<b>Total</b>	<b>\$4,436,346</b>	<b>100.0%</b>

Ex Ante Savings Based on Claims for 2017 Deemed Certain Measures - Adjustment 9 Applied: Revisions to EUL and RUL															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	84.67	28.95	1.23	49.75	17.18	0.74	538.01	173.45	6.65	303.63	100.19	4.08	330.53	108.87	4.41
SCE	110.68	21.45	-1.01	83.30	15.16	-0.88	665.13	159.12	-3.55	471.42	107.26	-3.07	504.67	115.22	
SDGE	22.66	3.04	0.35	15.42	2.05	0.18	100.99	14.80	1.33	67.12	9.59	0.69	72.17	10.33	0.76
SCG	0.56	0.25	2.28	0.31	0.11	1.40	5.59	4.98	13.52	2.76	2.14	7.96			8.63
<b>Total</b>	<b>218.57</b>	<b>53.69</b>	<b>2.85</b>	<b>148.78</b>	<b>34.50</b>	<b>1.44</b>	<b>1,309.73</b>	<b>352.35</b>	<b>17.95</b>	<b>844.93</b>	<b>219.18</b>	<b>9.66</b>	<b>907.37</b>	<b>234.41</b>	<b>13.81</b>

ESPI 2017 Deemed Certain Payment		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	-\$12,023	-0.7%
SCE	-\$65,874	-3.1%
SDGE	-\$58,817	-18.0%
SCG	-\$34,734	-13.8%
<b>Total</b>	<b>-\$171,448</b>	<b>-3.9%</b>

Ex Ante Savings Based on Claims for 2017 Deemed Certain Measures - Adjustment 10 Applied: Payments for 2017 Installations Only															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	84.40	28.90	1.23	49.60	17.15	0.74	546.85	173.82	6.02	309.00	100.44	3.71	336.34	109.13	4.01
SCE	105.45	19.94	-1.03	80.06	14.25	-0.89	647.22	153.85	-3.87	461.54	104.45	-3.29	493.90	112.15	
SDGE	22.66	3.04	0.35	15.42	2.05	0.18	122.89	17.35	0.95	86.94	11.87	0.36	93.09	12.73	0.41
SCG	0.48	0.17	2.03	0.27	0.08	1.26	4.26	3.46	13.90	2.17	1.51	8.32			9.01
<b>Total</b>	<b>212.99</b>	<b>52.05</b>	<b>2.58</b>	<b>145.35</b>	<b>33.53</b>	<b>1.28</b>	<b>1,321.22</b>	<b>348.49</b>	<b>17.00</b>	<b>859.65</b>	<b>218.27</b>	<b>9.10</b>	<b>923.33</b>	<b>234.01</b>	<b>13.43</b>

ESPI 2017 Deemed Certain Payment		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	-\$6,377	-0.4%
SCE	-\$114,582	-5.4%
SDGE	\$0	0.0%
SCG	-\$25,281	-10.1%
<b>Total</b>	<b>-\$146,239</b>	<b>-3.3%</b>

Ex Ante Savings Based on Claims for 2017 Deemed Certain Measures - Adjustment 11 Applied: Revisions to NTG															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	84.67	28.95	1.23	49.75	17.18	0.74	549.47	174.40	6.02	310.45	100.76	3.71	337.92	109.48	4.01
SCE	110.68	21.45	-1.01	83.29	15.15	-0.88	685.52	164.82	-3.63	484.96	110.79	-3.12	519.23	119.03	
SDGE	22.66	3.04	0.35	15.42	2.05	0.18	122.89	17.35	0.95	86.94	11.87	0.36	93.09	12.73	0.41
SCG	0.56	0.25	2.28	0.28	0.07	1.39	5.59	4.98	15.61	2.22	1.44	9.05			9.83
<b>Total</b>	<b>218.57</b>	<b>53.69</b>	<b>2.85</b>	<b>148.74</b>	<b>34.45</b>	<b>1.43</b>	<b>1,363.48</b>	<b>361.55</b>	<b>18.95</b>	<b>884.57</b>	<b>224.86</b>	<b>9.99</b>	<b>950.24</b>	<b>241.24</b>	<b>14.25</b>

ESPI 2017 Deemed Certain Payment		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	\$0	0.0%
SCE	-\$2,656	-0.1%
SDGE	\$0	0.0%
SCG	-\$4,721	-1.9%
<b>Total</b>	<b>-\$7,376</b>	<b>-0.2%</b>

2016 Ex Post and 2017 Ex Ante  
Performance Statement Report

Combine Adjustments 9, 10 and 11: Apply All Ex Ante Adjustments to IOU 2017 Ex Ante Claims as Submitted for Deemed Not Uncertain Measures															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	84.40	28.90	1.23	49.60	17.15	0.74	535.39	172.87	6.65	302.17	99.87	4.08	328.94	108.52	4.41
SCE	105.45	19.94	-1.03	80.05	14.24	-0.89	626.68	148.10	-3.80	447.48	100.33	-3.23	478.81	107.74	
SDGE	22.66	3.04	0.35	15.42	2.05	0.18	100.99	14.80	1.33	67.12	9.59	0.69	72.17	10.33	0.76
SCG	0.48	0.17	2.03	0.25	0.05	1.25	4.26	3.46	11.84	1.79	0.99	6.91			7.50
<b>Total</b>	<b>212.99</b>	<b>52.05</b>	<b>2.58</b>	<b>145.32</b>	<b>33.49</b>	<b>1.28</b>	<b>1,267.32</b>	<b>339.24</b>	<b>16.02</b>	<b>818.57</b>	<b>210.79</b>	<b>8.45</b>	<b>879.92</b>	<b>226.58</b>	<b>12.67</b>

ESPI 2017 Deemed Not Uncertain		
PA	EAR Team Adjustment	Percent of Ex Ante
PGE	-\$18,400	-1.1%
SCE	-\$183,590	-8.6%
SDGE	-\$58,817	-18.0%
SCG	-\$63,251	-25.1%
<b>Total</b>	<b>-\$324,058</b>	<b>-7.3%</b>

Deemed Not Uncertain Measures: Total Recommended Adjusted Accomplishments and Payments															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	84.40	28.90	1.23	49.60	17.15	0.74	535.39	172.87	6.65	302.17	99.87	4.08	328.94	108.52	4.41
SCE	105.45	19.94	-1.03	80.05	14.24	-0.89	626.68	148.10	-3.80	447.48	100.33	-3.23	478.81	107.74	
SDGE	22.66	3.04	0.35	15.42	2.05	0.18	100.99	14.80	1.33	67.12	9.59	0.69	72.17	10.33	0.76
SCG	0.48	0.17	2.03	0.25	0.05	1.25	4.26	3.46	11.84	1.79	0.99	6.91			7.50
<b>Total</b>	<b>212.99</b>	<b>52.05</b>	<b>2.58</b>	<b>145.32</b>	<b>33.49</b>	<b>1.28</b>	<b>1,267.32</b>	<b>339.24</b>	<b>16.02</b>	<b>818.57</b>	<b>210.79</b>	<b>8.45</b>	<b>879.92</b>	<b>226.58</b>	<b>12.67</b>

ESPI 2017 Deemed Not Uncertain		
PA	Apportioned Payment	Pct of Ex Ante
PGE	\$1,708,917	98.9%
SCE	\$1,947,142	91.4%
SDGE	\$267,957	82.0%
SCG	\$188,272	74.9%
<b>Total</b>	<b>\$4,112,288</b>	<b>92.7%</b>

## Appendix A: Revised Resolution E-4897 Savings And Payment Tables

**Final Saving and Payment Calculations for Deemed Not Uncertain Measure Claims From Resolution E-4897 December 14, 2017**

Total Deemed Ex Ante Claims (ESPI Adjustments: Sum of Part 1 and Part 2)															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	198.6	45.1	0.1	125.8	28.6	0.1	2,255.4	487.0	6.1	1,408.3	311.9	4.3	1,521.1	336.3	4.6
SCE	307.5	52.9	-3.9	213.5	35.3	-2.9	2,661.0	469.0	-33.5	1,650.3	292.4	-20.7	1,783.4	315.8	
SDGE	93.9	17.1	-0.3	59.0	10.6	-0.2	956.3	170.5	-5.0	568.9	103.0	-3.0	616.7	111.6	-3.3
SCG	5.0	2.7	3.8	3.0	1.9	2.3	40.7	22.0	35.2	21.6	13.5	20.5			22.3
Total	604.9	117.8	-0.2	401.3	76.4	-0.8	5,913.4	1,148.5	2.8	3,649.1	720.8	1.2	3,921.1	763.7	23.7

ESPI 2016 Deemed Not Uncertain Payment			
PA	Advice Letters	Claims EDCS	EAR Team Adjusted
PGE	\$6,988,256	\$6,681,686	\$6,366,816
SCE	\$8,272,039	\$6,757,897	\$6,722,146
SDGE	\$2,303,540	\$2,499,670	\$2,257,372
SCG	\$853,066	\$565,528	\$580,946
Variation from Advice Letters for all		-\$1,912,119	-\$2,489,621

**Final Saving and Payment Calculations for Deemed Not Uncertain Measure Claims For Resolution E-4897 As Corrected 15 September 2018**

Total Deemed Ex Ante Claims (ESPI Adjustments: Sum of Part 1 and Part 2)															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	199.4	45.4	0.2	126.3	28.8	0.1	2,266.2	491.4	6.2	1,414.9	314.6	4.4	1,528.2	339.2	4.7
SCE	307.5	52.9	-3.9	213.5	35.3	-2.9	2,661.0	469.0	-33.5	1,650.3	292.4	-20.7	1,783.4	315.8	
SDGE	93.9	17.1	-0.3	59.0	10.6	-0.2	956.3	170.5	-5.0	568.9	103.0	-3.0	616.7	111.6	-3.3
SCG	5.0	2.7	3.8	3.0	1.9	2.3	40.7	22.0	35.2	21.6	13.5	20.5			22.3
Total	605.7	118.1	-0.2	401.8	76.6	-0.7	5,924.2	1,153.0	2.9	3,655.7	723.5	1.3	3,928.2	766.6	23.7

ESPI 2016 Deemed Not Uncertain Payment			
PA	Advice Letters	Claims EDCS	EAR Team Adjusted
PGE	\$6,988,256	\$6,723,353	\$6,408,515
SCE	\$8,272,039	\$6,757,897	\$6,722,146
SDGE	\$2,303,540	\$2,499,670	\$2,257,372
SCG	\$853,066	\$565,528	\$580,946
Variation from Advice Letters for all		-\$1,870,452	-\$2,447,922

Differences for Corrected ESPI 2016 Deemed Not Uncertain Claims Payment			
PA	Advice Letters	Claims EDCS	EAR Team Adjusted
PGE	\$0	\$41,667	\$41,699
SCE	\$0	\$0	\$0
SDGE	\$0	\$0	\$0
SCG	\$0	\$0	\$0

## 2016 Ex Post and 2017 Ex Ante Performance Statement Report

### Resolution E-4897 Values As Corrected September 15, 2018

Deemed Not Uncertain Claims															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	199.4	45.4	0.2	131.1	30.0	0.0	2,273.0	492.4	6.2	1,492.6	332.8	3.9	1,606.2	357.4	4.2
SCE	307.3	52.9	-3.9	214.4	35.8	-2.9	2,659.2	465.0	-33.6	1,659.8	294.3	-20.7	1,792.8	317.5	
SDGE	93.9	17.1	-0.3	59.0	10.6	-0.2	1,044.4	180.6	-5.3	642.7	111.3	-3.5	694.9	120.4	-3.8
SCG	5.0	2.7	3.8	3.0	1.9	2.2	40.7	22.0	34.3	21.6	13.5	20.0			21.7
Total	605.5	118.1	-0.3	407.4	78.2	-0.8	6,017.3	1,160.0	1.6	3,816.8	751.9	-0.4	4,094.0	795.3	22.1

Custom Claims															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	331.0	52.5	10.3	280.1	44.9	8.4	2,089.4	291.7	71.4	1,561.3	219.9	49.9	1,665.7	234.5	53.4
SCE	269.9	46.2	0.8	190.2	32.3	0.4	2,466.9	434.7	11.1	1,652.4	276.8	5.8	1,775.8	298.6	
SDGE	52.2	35.0	2.0	40.2	32.9	1.4	428.4	111.5	16.0	269.2	80.6	9.3	290.6	86.2	10.2
SCG	3.4	2.3	7.9	2.0	1.6	4.0	56.1	37.4	79.4	32.7	25.6	43.5			47.4
Total	656.5	136.0	20.9	512.5	111.6	14.2	5,041.0	875.3	177.9	3,515.6	603.0	108.5	3,732.2	619.2	111.0

Deemed Uncertain Claims															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	107.4	41.3	1.6	70.3	28.1	1.0	859.6	318.0	16.8	541.9	210.1	10.5	584.9	226.0	11.3
SCE	72.6	21.9	0.1	43.1	12.8	0.1	558.2	147.2	0.1	327.7	84.3	0.1	355.6	91.6	
SDGE	51.4	12.7	0.7	32.7	8.5	0.4	581.0	138.1	7.1	365.1	90.8	3.9	394.2	97.7	4.3
SCG	0.0	0.0	2.4	0.0	0.0	1.5	-0.4	0.0	26.1	-0.2	0.0	15.8			17.1
Total	231.3	75.8	4.8	146.1	49.4	2.9	1,998.4	603.3	50.1	1,234.5	385.2	30.2	1,334.6	415.3	32.7

ESA Non-Resource															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	26.5	5.3	1.6	26.5	5.3	1.6	341.0	71.0	16.8	341.0	71.0	16.8	358.1	74.6	17.7
SCE	27.4	4.4	0.0	27.4	4.4	0.0	342.1	53.3	0.0	342.1	53.3	0.0	359.2	56.0	
SDGE	3.4	0.4	0.2	3.4	0.4	0.2	34.8	4.1	2.6	34.8	4.1	2.6	36.5	4.3	2.7
SCG	0.0	0.0	1.2	0.0	0.0	1.2	0.0	0.0	14.9	0.0	0.0	14.9			15.6
Total	57.3	10.2	3.0	57.3	10.2	3.0	717.9	128.4	34.3	717.9	128.4	34.3	753.8	134.8	36.0

2016 Ex Post and 2017 Ex Ante  
Performance Statement Report

Resolution E-4897 December 14, 2017 Values as Published

Deemed Not Uncertain Claims															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	198.6	45.1	0.1	130.6	29.8	0.0	2,262.3	487.9	6.0	1,486.1	330.1	3.8	1,599.2	354.5	4.1
SCE	307.3	52.9	-3.9	214.4	35.8	-2.9	2,659.2	465.0	-33.6	1,659.8	294.3	-20.7	1,792.8	317.5	
SDGE	93.9	17.1	-0.3	59.0	10.6	-0.2	1,044.4	180.6	-5.3	642.7	111.3	-3.5	694.9	120.4	-3.8
SCG	5.0	2.7	3.8	3.0	1.9	2.2	40.7	22.0	34.3	21.6	13.5	20.0			21.7
Total	604.7	117.8	-0.3	406.9	78.0	-0.8	6,006.5	1,155.6	1.5	3,810.2	749.2	-0.5	4,086.9	792.4	22.0

Custom Claims															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	357.4	57.8	11.9	306.6	50.2	9.9	2,431.3	362.7	88.2	1,902.8	290.9	66.7	2,024.4	309.0	71.1
SCE	263.4	42.3	0.8	183.7	28.4	0.4	2,775.2	479.7	11.1	1,960.7	321.9	5.8	2,099.5	345.9	
SDGE	55.7	35.4	2.2	43.7	33.3	1.6	463.2	115.6	18.6	304.0	84.7	11.9	327.1	90.5	12.9
SCG	3.4	2.3	9.0	2.0	1.6	5.1	56.1	37.4	101.4	32.7	25.6	61.1			66.2
Total	679.9	137.8	23.9	536.0	113.5	17.1	5,725.8	995.5	219.4	4,200.2	723.1	145.6	4,451.0	745.4	150.2

Deemed Uncertain Claims															
PA	First Year Gross			First Year Net			Gross Lifetime			Net Lifetime			Net Lifetime w/Market Effects		
	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm	gWh	mW	mmtherm
PGE	108.2	41.6	1.7	70.9	28.3	1.1	871.8	323.0	16.9	549.3	213.1	10.6	592.9	229.3	11.4
SCE	114.1	32.1	0.1	84.5	23.0	0.1	599.6	157.3	0.1	369.1	94.4	0.1	399.1	102.3	
SDGE	51.4	12.7	0.7	32.7	8.5	0.4	585.3	137.7	7.8	367.6	90.6	4.3	396.9	97.5	4.7
SCG	0.0	0.0	2.4	0.0	0.0	1.5	-0.4	0.0	26.1	-0.2	0.0	15.8			17.1
Total	273.7	86.4	4.8	188.1	59.8	3.0	2,056.3	618.1	50.9	1,285.9	398.1	30.8	1,388.9	429.0	33.2



## Appendix B: Response to Comments on Draft Report

Below are Commission staff responses to the comments filed on the draft report. The full comments are not included below, only the comment item number and heading. The full comment documents can be found on the CPUC Evaluation Studies Public Document website.<sup>33</sup>

- A. Comments from SoCalGas
1. Removal of the net to gross revision applied to 2016 PY claims for Multifamily direct install faucet aerator and low flow showerhead measures. (Adjustment 1)  
*Commission staff response:* The ex post team assigned a statewide net to gross result of 0.528 as reported in the 2013-2014 multifamily impact evaluation<sup>34</sup>. As noted by SCG, the net to gross value is the result of the Multifamily Energy Efficiency Rebate program that provides deemed rebates (and not direct install services) to customers for installing many different measures including faucet aerators and low-flow showerheads. The same report also evaluated the multifamily home upgrade program, which provides incentives to customers who use contractors to install measures, including aerators and showerheads. The home upgrade program is similar to a direct install program in that most work is carried out by contractors. The evaluation findings for the whole building upgrade program across all programs was 0.446. Commission staff supports the evaluations contractor's choice of net to gross in this case as being the best available evaluation result to utilize as the range of recent net to gross results for these measures does not support passing through the much higher ex ante value.
  2. Exception should be granted for specific 2016 Ex Post custom project claims with Pre-2015 installation dates due to CMPA review process. (Adjustment 2)  
*Commission staff response:* This exception was granted.
  3. Exception granted in resolution E-4897 for 2016 PY claims with pre-2016 installation dates due to processing delays in between utilities should be applied to Ex Post 2016 PY claims. (Adjustment 2)  
*Commission staff response:* This exception is not granted. SCG pre-2016 HUP claims from SCE partner projects were included in the 2015 HUP evaluation

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<sup>33</sup> Go to <https://pda.energydataweb.com/#/> and search for "2016 ex post and 2017 ex ante draft Performance Statements for 2018 ESPI awards" (or just ESPI) and press the "Comments" button.

<sup>34</sup> "2013-2014 Residential Roadmap Multifamily Focused Impact Evaluation - Final," Calmac Study ID CPU0119.01, prepared for The California Public Utilities Commission, Energy Division, by Apex Analytics and DNV GL, February 29, 2016

report and included in the 2015 ESPI ex post payment which was the basis for the gross realization rate reduction to 0.99 in this report.

4. Claim level revision of 2016 Ex Post data – incorrect installation date reported (Adjustment 2)  
*Commission staff response:* This request for change was granted.
  5. Comments regarding adjustment of Industrial/ Agriculture/ Large Commercial (IALC) claims utilizing 2015 Ex Post Results (Adjustment 3)  
*Commission staff response:* This request was not granted. As explained, 2015 results were used for all other program adjustments and will be retained for the IALC adjustment for consistency of policy application.
  6. Adjustment of Energy Upgrade California claims (Adjustment 5)  
*Commission staff response:* This request for change was partially granted, see the description in the appropriate report section and the supporting calculation documentation.
- B. Comments from SDG&E
1. Establishing Total Savings Basis (item I.A.1)  
*Commission staff response:* This item was addressed as described in Adjustment 8 in Section I. SDG&E correctly pointed out the total savings for deemed uncertain and deemed not uncertain listed in the draft report were not in agreement with the values list in the supporting workbooks from Resolution E-4897. Commission staff identified that there were inconsistencies between the deemed measure classification between the Commission evaluation team’s “All Things Recorded” files and the details of the supporting workbooks from Resolution E-4897 that caused some savings claims to not be included in either payment calculation. The issue was corrected and savings for all IOUs were adjusted in Adjustment 8.
  2. “Lighting Indoor LED Fixture” measure group (item I.A.2. a)  
*Commission staff response:* In its comments, SDG&E requested that certain effective useful life values assigned a value of zero by the ex post team be revised to the previously approved ex ante values. Commission staff has reviewed this group of claims and observes that SDG&E has reported no savings for these measures. Therefore, a revision to the effective useful life would result in no change to the deemed savings claims and resulting payments. In future, if savings are claimed for this measure group then the effective useful life will be adjusted per evaluation results.
  3. “Lighting Indoor LED Fixture” and “Lighting Outdoor LED Lamp” measure groups (item I.A.2. b and c)  
*Commission staff response:* In its comments, SDG&E has mistakenly attempted to find the evaluators’ ex post effective useful life values in the DEER and non-DEER effective useful life table of ex ante values. The evaluators examine the measure for normal replacement versus accelerated replacement for proper IOU claim classification, develop ex post hours of use to replace ex ante values for

hours of use, and then reset the effective useful life based on the combination of those ex post adjustments. The values assigned in the “All Things Recorded” files are then either statewide values or IOU specific values for effective useful life for lighting. The values in question are taken from the evaluation report results as documented by the evaluators in their supporting documentation, not from the DEER or non-DEER effective useful life table. For this specific effective useful life value, evaluators assigned the stated effective useful life for residential lighting that is listed in table 4-13 of 2013-2014 multifamily impact evaluation report.

4. “Refrigeration Case LED Lighting” (item A2d)  
*Commission staff response:* Refrigeration case lighting retrofit effective useful life values are considered limited by the RUL of the host equipment (the refrigerated case) thus the effective useful life is limited the four-year RUL of the refrigerated cases.
5. Realization rates (RR) for HVAC Economizers Direct Install (item I.B)  
*Commission staff response:* The evaluation report lists the realization rate of 100%. However, Table 26 of the same report<sup>35</sup> shows that the SDG&E installation rate for this measure is zero so applying any adjustment other than zero is giving the benefit of doubt to SDG&E 2016 activity in comparison to the observed 2015 activity.
6. Adjustment 2: Removal of pre-2016 installed measures in 2016 claims except 2015 non-small Custom Projects (item I.C)  
*Commission staff response:* For future ESPI payment advice letter filings, IOUs are required to flag projects that were subjected to post-installation M&V, so that it can be determined whether an exception is to be made for including them in payment calculations. Absent this information, the Commission will remove all projects and savings claims that do not fall in the program year for which savings are being claimed.
7. 2017 Claims and Modifications to the Data for the PY+1 ESPI Energy Savings Payment Calculation (item II)  
*Commission staff response:* This issue has been addressed. Investigation of this issue resulted in the identification of a formulae error in the Resolution E-4897 calculation workbooks as well as the 2017 claims workbook used for the draft report. The correction of this error resulted in a minor correction to the payments from Resolution E-4897 and also the 2017 payments from the draft report. There was not a similar error identified for the 2016 ATR files.

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<sup>35</sup> “Impact Evaluation of 2015 Commercial Quality Maintenance Programs (HVAC3),” CALMAC Study ID CPU0117.03, prepared for prepared for The California Public Utilities Commission, Energy Division, by DNV GL, April 7, 2017.

C. Comments from SCE

1. The Commission Should Continue to Conduct the 2016 Impact Evaluation (item II.a.)

*Commission staff response:* There are no plans to perform added 2016 evaluation work under new evaluation contracts. The new contractors will be fully engaged in looking at 2017 and beyond.

2. The Draft Report Should Allow Custom Projects from the Fourth Quarter of 2015 (item II.b.)

*Commission staff response:* Please see staff response to Adjustment 2 above.