RTR Appendix

Southern California Gas Company (SoCalGas) developed Responses to Recommendations (RTR) contained in the evaluation studies of the 2013-2015 Energy Efficiency Program Cycle and beyond. This Appendix contains the Responses to Recommendations in the report:

RTR for the Strategic Energy Management (SEM) 2021-2022 Impact Evaluation
(DNV, Guidehouse, Calmac ID #CPU0375.01)

The RTR reports demonstrate SoCalGas' plans and activities to incorporate EM&V evaluation recommendations into programs to improve performance and operations, where applicable. SoCalGas' approach is consistent with the CPUC Decision (D.) 07-09-043[1] and the Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification (EM&V) Plan[2] for 2013 and beyond.

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

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

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

2 Page 336, "Within 60 days of public release of a final report, the program administrators will respond in writing to the final report findings and recommendations indicating what action, if any, will be taken as a result of study findings. The IOU responses will be posted on the public document website." The Plan is available at http://www.energydataweb.com/cpuc.

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

Response to Recommendations (RTR) in Impact, Process, and Market Assessment Studies
SCG Response

Study Title: PY 2021 SEM Impact Evaluation
Program: SEM
Author: DNV
Calmac ID: CPU0375.01
ED WO: EM&V GROUP D
Link to Report: Strategic Energy Management (SEM) 2021-2022 Impact Evaluation

MANAGEMENT APPROVAL AFTER REVIEWING ALL IOU RESPONSES		
	Name	Date
SCG EE Programs	Darren Hanway	09/05/2024
SCG RP&R	Roy Christian	9/6/20224

Item #	Sec. #	Findings	Best Practice / Recommendations (Verbatim from Final Report)	Recommendation Recipient	Disposition	SCG Disposition Notes
				If incorrect, please indicate and redirect in notes.	Choose: Accepted, Rejected, or Other	Examples: Describe specific program change, give reason for rejection, or indicate that it's under further review.
1	5.1	Bottom-up approach calculates SEM energy savings on the measure level. However, the majority of the implemented SEM projects are BRO measures that generate interactive effects which impact other systems in addition to the system targeted by the measure. This impact is often difficult to calculate accurately at the measure level and could only be captured by the overall impact on the site's total energy consumption. Bottom-up approach uses measure-specific formulas, inputs, and assumptions, to calculate the measure-specific savings. Since installed measures could vary significantly, this poses a complication in ensuring that all measure calculations meet the appropriate rigor to calculate accurate savings. The overall bottom-up savings are calculated by aggregating the energy savings of each installed measure. The participant is expected to provide documentation to supplement the savings calculation of each measure. This includes documentation of quantities, sizes, hours of operation, and any other measure-specific parameter. Additionally, when bottom-up sites are selected for evaluation, they are expected to provide supplemental information as requested by the evaluators. This includes but is not limited to trend data, photographs of nameplates or equipment, verification of quantities (such as invoices), and any other measure-specific documentation. This creates an additional burden on program participant to provide such documentation when using the bottom-up approach compared to the top-down approach.	Prioritize calculating energy savings using top-down approach to bottom-up calculations. Bottom-up calculations should only be used when a top-down model is proven to not be feasible. Prioritize identifying and addressing issues that impede creating a valid top-down model as early as possible during SEM participation.		Other	Prioritizing top-down and accepting bottom-up is the typical approach of most SEM programs nationwide. However, for some customers, models are not feasible, and this can be determined prior to model creation, in accordance with section 7.2 of CA SEM M&V Guide v3.02. In these cases, prioritizing model creation is not cost-effective and ultimately makes SEM more expensive for rate payers. The section below from the SEM SW IOU M&V Guidance document supports this response. "7.2 Assessing if Modeling Should be Attempted An assessment of the site and customer should be made to determine if the process of energy consumption adjustment modeling should be undertaken. The following are non-exhaustive lists of potential indicators that either show energy consumption modeling efforts should not be made, that additional review and scrutiny should be placed on models as they may not be able to be used to calculate valid energy savings, or that energy models should be abandoned mid Reporting Period. Regardless of the following being true for a customer, the implementer may wish to attempt to develop energy consumption adjustment models. Before or at the beginning of engagement in the SEM Program: • Estimated site wide energy savings potential is less than 1% of annual site energy consumption or less than 100,000 kWh of electricity per year or 20,000 therms per year. • Major site, production, or schedule changes have occurred in the past year or are planned in the next year. • Site energy consumption is increasing at a rate greater than a few percent per year. • EPIAs with greater than 5% of a baseline energy consumption have been identified and planned for implementation by the customer prior to the engagement in the SEM program and will be implemented in the Baseline Period or during engagement in the SEM Program.

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						• Highly variable production, production cycles longer than a month, or seasonal production are observed. • On-site energy generation isn't metered. • More than 10 energy meters for a given type of energy are identified. During engagement in the SEM Program: • Energy and relevant variable data are not being collected and site staff are not indicating interest in correcting this issue. • Energy and relevant variable data are recorded in a format that will require excessive time to process (e.g., PDF, manual logging sheets). • Energy data quality is poor (e.g., missing intervals, multiple data points appear to be erroneous, interval data isn't consistent with billing data). • Relevant variable data quality is poor (e.g., significant missing intervals, multiple data points appear to be erroneous). The decision and rationale to not start or not continue energy consumption adjustment model development shall be documented in a "Notification of Bottom-up Method of Determining Energy Savings," summary and submitted to the PA for their review and approval. The Notification of Bottom-up Method of Determining Energy Savings summary shall contain: • Statement describing efforts taken to-date to create energy consumption adjustment models. • Justification for not further pursuing energy consumption adjustment models and switching to the bottom-up approach. • Discussion of what efforts can and will be taken to enable the development of energy consumption adjustment models in subsequent Reporting Periods. The Notification of Bottom-up Method of Determining Energy Savings summary shall only be valid for the current Reporting Period. A new summary shall be needed for each subsequent Reporting Period if the bottom-up method shall be requested for those Reporting Periods, otherwise the assumption will be made that an energy consumption adjustment model will be developed."
2	5.1	Bottom-up approach calculates SEM energy savings on the measure level. However, the majority of the implemented SEM projects are BRO measures that generate interactive effects which impact other systems in addition to the system targeted by the measure. This impact is often difficult to calculate accurately at the measure level and could only be captured by the overall impact on the site's total energy consumption. Bottom-up approach uses measure-specific formulas, inputs, and assumptions, to calculate the measure-specific savings. Since installed measures could vary significantly, this poses a complication in ensuring that all measure calculations meet the appropriate rigor to calculate accurate savings. The overall bottom-up savings are calculated by aggregating the energy savings of each installed measure. The participant is expected to provide documentation to supplement the savings calculation of each measure. This includes documentation of quantities, sizes, hours of operation, and any other measure-specific parameter. Additionally, when bottom-up sites are se-	Attempt top-down models and include them in the project files even when using bottom-up calculations. This will allow the PAs and the evaluators an opportunity to review those models to confirm the reasons for using bottom-up calculations.		Other	In SoCalGas' experience, a top-down approach is not always viable. When there is a justifiable reason for using bottom-up calculations, it means that a top-down model was attempted and abandoned, and the justification is documented. Often, the justification describes why a model cannot be developed, such as the relevant variable data that explains the energy use and makes the model more accurate is not available. Even if the evaluator came back later in these situations to pursue the top-down model, unless something had changed, the top-down approach would still not be viable in many situations. Additional information was requested from the evaluators and their response seems to imply that even if the top-down model is not pursued, Implementers should still collect energy and relevant variable data. This continuation of collecting the relevant variable data would

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		lected for evaluation, they are expected to provide supplemental information as requested by the evaluators. This includes but is not limited to trend data, photographs of nameplates or equipment, verification of quantities (such as invoices), and any other measure-specific documentation. This creates an additional burden on program participant to provide such documentation when using the bottom-up approach compared to the top-down approach.				be a use of resources that would be better used for finding and implementing more savings opportunities, and for conducting bottom-up calculations.
3	5.1	Bottom-up approach calculates SEM energy savings on the measure level. However, the majority of the implemented SEM projects are BRO measures that generate interactive effects which impact other systems in addition to the system targeted by the measure. This impact is often difficult to calculate accurately at the measure level and could only be captured by the overall impact on the site's total energy consumption. Bottom-up approach uses measure-specific formulas, inputs, and assumptions, to calculate the measure-specific savings. Since installed measures could vary significantly, this poses a complication in ensuring that all measure calculations meet the appropriate rigor to calculate accurate savings. The overall bottom-up savings are calculated by aggregating the energy savings of each installed measure. The participant is expected to provide documentation to supplement the savings calculation of each measure. This includes documentation of quantities, sizes, hours of operation, and any other measure-specific parameter. Additionally, when bottom-up sites are selected for evaluation, they are expected to provide supplemental information as requested by the evaluators. This includes but is not limited to trend data, photographs of nameplates or equipment, verification of quantities (such as invoices), and any other measure-specific documentation. This creates an additional burden on program participant to provide such documentation when using the bottom-up approach compared to the top-down approach.	When using a bottom-up approach, SEM participants should take the following actions: • Continue providing thorough documentation to justify calculating the SEM savings using bottom-up calculations. • Use on-site metering and trend data to determine the most accurate values for parameters used in measure-level calculations. Using as-built values lead to accurate savings estimation. • Provide thorough documentation of all inputs and parameters used in bottom-up calculations. • Expect and prepare to fulfil data requests made by the evaluators to validate measure-specific parameters.		Accept	SoCalGas accepts this recommendation and notes that this is the implementer's standard practice. The Implementer agrees to continue to use bottom-up level of rigor required by CA SEM M&V Guide v3.02, annex D Bottom Up EPIA Calculation Effort.
4	5.2	Savings annualization carries a significant savings miscalculation risk as sites' operations and production during the annualization period may be misrepresentative of typical operations over a full year. • Savings annualization is not consistent with the SEM's performance-based approach to estimating savings using billing analysis, and it creates analytic difficulties in truing up savings in subsequent years.	Follow the SEM M&V guidelines which recommended limiting the annualization to only when the model is being retired or a customer will not be participating in the SEM program after the current reporting period, with PA authorization. Hence, annualized savings will be rejected when annualization is likely to produce inaccurate annual savings, such as seasonally impacted savings, or where savings are not steady from time period to time period, such as shutdown-type measures.		Accept	SoCalGas accepts this recommendation and notes that this is the implementer's standard practice. The Implementer will report models using achieved savings as required by CA SEM M&V Guide v3.02, section 1.4.
5	5.2.2	Model adjustments performed by the DNV team accounted for 27% of difference between forecasted and evaluated savings. The DNV team reviewed all top-down models that were used by SEM participants to calculate savings for projects implemented in PY2021/2022. Overall, the DNV team determined that the sites that employed top-down models were consistent and well-developed. Overall, model adjustments conducted by the DNV team contributed 27% to the overall discrepancy between forecasted and evaluated savings, as presented in section	Follow the SEM M&V guidelines on creating top-down models and assess their validity.25 Below are some examples of the steps to take in ensuring the M&V guidelines are followed: • Ensure that the model is reflective of the facilities' typical operation for both baseline and reporting periods. • Ensure that any short-term changes (such as shutdowns) are included in the model as accurately as feasible. Including the actual days of shutdowns results in a higher correlation with energy consumption than simply using an indicator of either 1 or 0. • Investigate the reasons for data points that reflect high residuals or fall outside of the range of the variable statistical significance and adjust the model accordingly. Tracking and documenting sources of outliers is more feasible during the model development phase as variables are being actively monitored. • Ensure that the model is using variables that are relevant and not correlated.		Accept	SoCalGas accepts this recommendation.

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6	5.2.2	Model adjustments performed by the DNV team accounted for 27% of difference between forecasted and evaluated savings. The DNV team reviewed all top-down models that were used by SEM participants to calculate savings for projects implemented in PY2021/2022. Overall, the DNV team determined that the sites that employed top-down models were consistent and well-developed. Overall, model adjustments conducted by the DNV team contributed 27% to the overall discrepancy between forecasted and evaluated savings, as presented in section	Avoid using hard-coded values in the savings calculations. The use of hard-coded values prevents the participants, PA reviewers, and evaluators from tracking the sources of the used values and complicates the process of updating and validating model results.		Other	SoCalGas agrees that hard-coded values in savings calculations should be avoided for Bottom-Up calculations. However, for Top-Down, adding this step of aggregating meter data inside the live model will increase model creation time, which ultimately will increase SEM costs. Previously all meter data was uploaded into a web-based database that performed the aggregation and allowed for data cleaning and quality checking. Shifting meter aggregation to a manual process is possible but will take more time and has the potential to cause manual input errors.
7	5.3	The DNV team recognizes that the project documentation provided by SEM participants follow the sequential process of developing SEM projects from project initiation to savings claims submission. However, providing completion reports and savings calculation models that do not correspond to the final forecast savings claim does not allow for the validation of the final forecasted savings.	Update relevant project documents such as the completion report and the calculation models to reflect any changes implemented during the technical review phase.		Accept	SoCalGas accepts this recommendation.
8	5.3	The DNV team recognizes that the project documentation provided by SEM participants follow the sequential process of developing SEM projects from project initiation to savings claims submission. However, providing completion reports and savings calculation models that do not correspond to the final forecast savings claim does not allow for the validation of the final forecasted savings.	Include any updated models or final savings estimates in the project documentation package.		Accept	SoCalGas accepts this recommendation.
9	5.4	While there are slight variations between fuels and PAs, the assumption that the NTGR of the SEM program is 1, essentially, stands. The convention is that CEDARS will incorporate a unique fuel-specific NTGR for each PA for calculating net savings. The CPUC may wish to consider authorizing a single statewide SEM NTGR value of 1 for both electric and gas savings, given the clustering of the results around 1.	Evaluators recommend using the combined SEM NTGR and to apply it to all measures whether capital or non-capital. The combined NTGR accuracy is superior to the capital NTGR alone. Attempting to apply separate NTGR values to capital and non-capital would require savings to be reported as capital and non-capital in CEDARS, adding an unnecessary administrative burden. A requirement for separate applications of a capital and non-capital NTGR could also lead to perverse incentives to classify more measures in the Opportunity Register as non-capital.		Accept	SoCalGas accepts this recommendation.
10	5.4	The Opportunity Register is an important source of information for identifying measure types to support evaluation. The measure type field was well populated and was 90% accurate. Two other important fields, measure cost and measure savings, are not well populated in the Opportunity Register. Both fields can be used to inform EUL calculations and program cost-effectiveness and can aid in the customer's prioritization of measures.	Evaluators recommend that the program implementers populate the applicable fields for any completed measure with estimated savings and costs. The savings and costs are effective tools for customers to prioritize measures and can streamline identification of capital measures as the program scales.		Accept	SoCalGas accepts this recommendation.
11	5.4	A comparison of the new SEM with the standard scoring method shows an increase of about 0.15 points in this round of research, reflecting the participant's valuation of the program. Because capital measures account for only about 16% of programs savings, the SEM NTGR changes only by 1-2%. For another program where the customer is less engaged or where other non-program factors are present, that same weighting might yield a lower score using the SEM algorithm. The method is not inherently biased upwards.	The DNV team recommends adopting the SEM survey instruments and SEM scoring method to estimate NTG for SEM capital measures in the future.		Accept	SoCalGas asks that PAs be involved in reviewing the survey instrument, at the latest, at the time of the issuance of the draft workplan for the evaluation.