

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Examine the
Commission's Post-2008 Energy Efficiency Policies,
Programs, Evaluation, Measurement, and Verification,
and Related Issues.

Rulemaking 09-11-014
(Filed November 20, 2009)

**COMMENTS OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902 M)
AND SOUTHERN CALIFORNIA GAS COMPANY (U 904 G) ON ASSIGNED
COMMISSIONER RULING REGARDING EVALUATION, MEASUREMENT AND
VERIFICATION**

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July 16, 2010

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Pursuant to the July 2, 2010 *Assigned Commissioner's Ruling* ("ACR"), San Diego Gas & Electric Company ("SDG&E") and Southern California Gas Company ("SoCalGas") (collectively referred to as the "Joint Utilities") respectfully submit their comments on the following questions posed by the Commissioner regarding various Evaluation, Measurement & Verification ("EM&V") issues.

**I.
EM&V OBJECTIVES**

- A. Several parties suggest adding a reference to the Strategic Plan's goal of market transformation to the Commission's adopted EM&V objectives. In particular, DRA proposes adding the following phrase to the "Market Assessment" objective adopted in D.09-09-047: "The goal of market assessment is to identify a common set of Market Transformation definitions based on CPUC assigned market indicators, which will allow the Commission to determine when market transformation has occurred for a program." Do parties support the addition of this phrase to the Market Assessment objective?**

Response: The Joint Utilities do not support adding this objective to the "Market Assessment" objectives. First, Market Transformation (MT) isn't the result of one program or one market strategy or one delivery mechanism. What may be "transformed" in one market may not be in another. Second, it would be very difficult for the CPUC to assign the proper market indicators, measure them with the necessary high degree of accuracy, and establish, with a similar high degree of accuracy, the threshold at which MT has, in fact, occurred. Third, while a market may be labeled "transformed," a threshold question to be answered with reasonable

certainty is whether such “transformation” would be permanent without EE support? For example, if the Upstream Lighting program was to remove the manufacture incentives, would the retailers still devote the same amount of shelf space to CFLs without the buy down, or would it revert to stocking inefficient incandescent bulbs? The Joint Utilities believe that the best, objective indicator that MT has most likely occurred is that point in time when the CEC adopts the measure or practice as part of the California Building Codes or Appliance Standards.

B. Do parties support SCE’s suggestion that the Market Assessment objective be expanded to specify that the purpose of Market Assessment is to assist the Commission in “[m]onitoring and guiding progress on meeting the goals of the Strategic Plan; and guiding updates to the Strategic Plan by providing new information about what market changes are most feasible and cost-effective”?

Response: Yes, the Joint Utilities support SCE’s recommendation.

C. Can the suggestions in questions 1 and 2 above be reconciled and, if so, how?

Response: Yes, as stated above, the Joint Utilities believe that Market Transformation should be determined when the measure/practice is adopted as a Building Code or Appliance Standard. Market Assessment studies, however, can and should be used to regularly review progress toward meeting the goals of the Strategic Plan as well as providing guidance on how the Plan should be updated to reflect new market data.

II. MACRO CONSUMPTION METRICS

A. The NRDC supports and encourages exploration of Macro Consumption Metrics as a supplement to, but not replacement of, the current energy and demand saving metrics.¹⁷ Do parties agree with NRDC?

Response: Yes, the Joint Utilities support a “trial run” of Macro Consumption Metrics to evaluate energy *policy*, but not energy efficiency programs or portfolios. The Joint Utilities stress that this would be a supplement and not a replacement for current impact evaluation activity. There are other complex variables that have greater influence on the change in consumption from a macro level beyond energy efficiency savings, e.g., pricing changes, weather, prevailing economic conditions, etc. Accurately disaggregating all the multiple various EE effects in the estimation process could be extremely challenging. Testing the viability of this approach in a pilot evaluation would be a prudent first step.

1. If Macro Consumption Metrics cannot replace current impact evaluation practices, do they offer other benefits?

Response: Yes. The Macro Consumption Metrics would provide feedback to the CPUC and legislature on market trends to be considered in establishing energy policy, not limited to energy efficiency. Demand Response, Distributed Generation, Solar, Wind, Low Income, along with Energy Efficiency and other policies could be evaluated in aggregate as to the success of energy policy. However, the Joint Utilities emphasize that this would neither provide a ranking of best to worse performers, nor provide a list of “winners” (cost-effective) and “losers” (non cost-effective), and therefore not provide the feedback required to determine which programs to continue or increase funding and which to decrease or cease funding.

2. The NRDC suggests Macro Consumption Metrics are necessary to “help inform progress towards the state’s objective to limit greenhouse gas emissions.” However, SCE argues that converting existing energy savings metrics to GHG emission reductions is sufficient to accomplish the same goal. Which perspective is most valid?

Response: As a first preference, the Joint Utilities believe NRDC statement is more valid as a means of tracking GHG reduction progress, as the Macro Consumption Metrics would avoid (or at least minimize) double-counting of green house gas emissions. For example, if a manufacturer participated in a sponsored EE program and saved 100 tons of GHG, it’s possible that the manufacturer, the Program Administrator, and the Air Pollution Control district would all claim the savings. At the Macro Consumption level, this quantum of savings would only be counted once. In addition, consistent with the comment in a. above, measuring the GHG impacts from the iterative effects of the policies of the CPUC and legislature on energy policy programs would lead to more consistency in accounting for GHG and also minimize double counting.

Notwithstanding the above, however, the Joint Utilities do support the concept of converting energy savings metrics to GHG as a method of prioritizing energy efficiency measures and evaluating overall program performance.

B. Do parties agree with PG&E’s suggestion that the inherent limitation of Macro Consumption Metrics is that “factors outside of the energy efficiency arena could skew the perceived effect of the energy efficiency programs themselves?”

Response: Yes. As stated above, the Macro Consumption Metrics are valuable as a tool to measure the overall impacts of energy policy only, but NOT appropriate to measure the effectiveness of energy efficiency programs or portfolios due to the likely impacts of externalities (weather, energy pricing, economic conditions, population trends) on the results.

1. Is it possible to control for factors like economic activity or electrification of transportation such that the impact of energy efficiency is more evident?

Response: Yes. While the Joint Utilities are not ready to propose how to control for factors like economic activity and the growth of electric vehicles, we believe this could be accomplished at a macro level. This is more appropriate at the stage when the actual statistical model is being developed as there are many technical considerations that need to be explicitly identified and cost considerations for the necessary data required to estimate the model. But again, the results should be used only for measuring general energy policy, not EE programs or portfolio performance.

2. Would the availability of certain data strengthen Macro Consumption Metrics? If so, what data, if any, would improve the reliability of econometric evaluations?

Response: The Joint Utilities believe it is premature to comment on the required data elements and suggest it be brought before the working group described in the section “EM&V Beyond California.”

C. Would the addition of a Macro Consumption Metric comparable to that suggested by Horowitz, or other approaches, provide more certain measures of the aggregate impact of California’s energy efficiency policies than is available through existing EM&V?

Response: Yes. There are numerous contentious savings parameters upon which the parties disagree such as net-to-gross which lead inevitably to conflicting energy savings estimates. However, these parameters become irrelevant in Macro Consumption Metrics where only a very few parameters are required. Again, the Joint Utilities emphasize that this would apply to energy policies and not EE programs or portfolios.

D. Would the addition of a Macro Consumption Metric comparable to that suggested by Horowitz, or other approaches, provide evaluation results more quickly than existing EM&V?

Response: Yes. The addition of, and not a replacement by, a Macro Consumption Metric could provide results more quickly than current EM&V load impact studies. Energy sales are known immediately and population estimates could be created very quickly. Additional economic data may already be available at the state level. The other variables required for modeling, currently unknown, may take longer to develop, but it should be faster than waiting for 12 months of post-installation consumption data as current load impact evaluations require before the analysis begins.

**III.
EM&V BEYOND CALIFORNIA**

A. Parties suggest California establish a working group of evaluation practitioners and users to explore best practices for California and facilitate increased collaboration. What form would this working group take?

Response: The Joint Utilities recommend that a specific Committee be formed similar to the current CALMAC team or the CADMAC team of the 1990s. It would contain a specialized group of experts that have knowledge and experience in both specific energy efficiency activities within the state including a thorough understanding of their significance in obtaining Energy Efficiency objectives as well as an understanding of the more general research methods necessary to design EM&V studies and evaluate EM&V reports. The group should include all of the major stakeholders (program administrators, Energy Division, industry experts if possible and EM&V contractors) as well as independent evaluators (academics, quasi-academics such as individuals from organizations like LBNL). If possible, the primary committee should be limited to no more than 10 members. Sub-committees can be developed as necessary for specific requirements.

1. What should be the responsibilities of such a group?

Response: The primary function of the committee would be to develop and Evaluate EM&V studies using peer-review methods from start to finish. The team would decide which studies would be required, the appropriate study design criteria, what methods should be used to evaluate the programs and have a significant say in which studies should be rejected and which should be accepted based on the evaluation results. Their responsibilities should include the

development of standard evaluation protocols (based upon the existing protocols), revising evaluation protocols when necessary, providing feedback on EM&V studies and providing recommendations on EM&V study design as well as recommendations on program design and implementation of programs given EM&V results. The committee would be responsible for holding meetings open to the public for presentation of results, provision of feedback and discussion of implementation. In essence, this group should have tasks similar to the Energy Division's Master Evaluation Contract Team ("MECT") but have a more balanced set of participants, not just consultants and be more open to the public.

2. Who should lead the effort?

Response: The leadership for the committee should be independent of the Commission, the program administrators, and other interested parties. An entity such as LLNL could take the leadership role. The change in leadership away from the interested parties would hopefully reduce the overall level of distrust and controversy.

3. What would be the group's relationship with the Commission?

Response: The group should be used as an independent advisory board that is recognized and respected by the Commission. However, the Commission would need to address the legal requirements regarding this advisory board.

4. How should the Commission use the group's recommendations?

Response: The Committee should be used as a central element in conducting EM&V studies and in analyzing the validity of EM&V results and their applicability to measuring savings and in portfolio planning. Their recommendations should be a primary data point in any Commission decisions related to EE program performance.

IV. EXPERIMENTAL DESIGN

A. **D.10-04-029 adopted a policy to measure and count savings from “comparative usage programs” using experimental design. OPower suggests that there may be an expanded role for experimental design in California’s energy efficiency evaluation framework. OPower admits that experimental design cannot be used for every energy efficiency initiative, but argues that it should be the preferred initiative when practical.**

1. Could and should experimental design be practically applied to energy efficiency initiatives beyond comparative usage programs?

Response: Experiments that have well-defined treatment and control groups are often the preferred scientific method. However, there are many other considerations (cost, difficulty of defining treatment and control groups, contamination by previous or contemporaneous treatments, etc.) that make experiments difficult or impossible to use effectively in many cases. Finding exact control groups is often impossible for many large programs.

Experimental design, on the other hand, can be an option for new or pilot programs as initial participation can be limited in order to identify a control group. If this is the case, this EM&V method becomes an intrinsic component of the program implementation plan and data collection for the analysis becomes a natural part of the program design. The study results could provide a reasonable set of savings assumptions that can be used for planning the next phase of the program. However, once the program matures and participation increases, experimental design is no longer a practical methodology. If successful, it will be difficult to maintain a non-participant/control group as these customers should be allowed to benefit from the program.

Therefore, when practical and cost-effective, experimental design should be an alternative evaluation method but not necessarily the preferred method. The final method should be left up to the EM&V Committee developed above for this purpose.

2. Would experimental design be an appropriate methodology to measure the impact of each of the 12 statewide programs approved in D.09-09-047? Please delineate between the subsets of each statewide program as necessary, and indicate which subset would be well served by experimental design.

Response: Many of the SW programs are mature and it may not be practical to impose an experimental design methodology on them. Historically in the pre-98 program years, it was already difficult to find control/non-participant groups for comparative analysis of program

impacts. Some control groups, for example new construction programs, had to be from other states as California's building codes were not implemented elsewhere.

On the other hand, it may be reasonable to investigate the applicability of this methodology to the Whole House Retrofit Program as this is new a program design. Should the Commission be interested in this application, it would be necessary to begin the design phase at this point since the programs are expected to begin full implementation by September 1, 2010. As stated above, the program design would have to take this into consideration so that an appropriate control group can be identified upfront.

V. MARKET TRANSFORMATION

A. D.09-09-047 directed the Commission's Energy Division to develop market transformation metrics, a process which is currently underway. Most parties agree that the Commission needs to do more to measure progress in achieving market transformation. Do parties agree with DRA's suggestion that the Commission should adopt market transformation metrics already developed by the NEEA?

1. Are there available best practices from NEEA that should be adopted by California? Please be specific.

Response: Since DRA did not provide detailed comments regarding the specific metrics they recommend from NEEA, the Joint Utilities reviewed the following document "Performance Report for the NEEA Board, First Quarter 2010"¹. This report identifies the various market performance goals, key indicators and their status towards achievement. These types of goals and metrics are not new to California as such endeavors were undertaken from 1998 through 2000. Certainly these types of goals and key indicators can be adopted by California. However, it is critical to note that NEEA's goals and key indicators are high level and only contain a small number of highly relevant metrics. Furthermore, these metrics are done at the market segment level not at the program and subprogram level. It is critical to note that this narrow focus on achieving a small but relevant set of goals measured by very targeted indicators is likely the most significant factor contributing to NEEA's achievement. What the Commission should determine regarding the application of this concept is what relevant goals need to be tracked, the 5 Big Bold

¹ http://www.nwalliance.org/research/reports/NEEA_Q1_Performance_Report_Web.pdf

Energy Efficiency Strategies or the goals of 12 statewide programs and a myriad of subprograms, partnerships and local programs.

2. **What would be the primary challenges in adopting market transformation metrics from NEEA? What strategies could be applied to overcome such challenges?**

Response: See response to a. above.

VI. EM&V NEEDS AND ACTIVITIES OF THE CEC

- A. **D.08-07-047 sets interim energy efficiency savings goals for 2012 through 2020 for electricity and natural gas on a Total Market Gross (“TMG”) basis. The TMG goals encompass forecasted energy savings from a wide range of energy efficiency activities beyond investor-owned utility (“IOU”) programs. Can existing EM&V practices adequately determine the impact of energy efficiency initiatives beyond the Commission’s energy efficiency programs (i.e., compliance with codes and standards)? If not, should this capability be added and how?**

Response: A potential method to estimate the progress towards the TMG may be the Macro Consumption Metric discussed above. Notwithstanding the limitations of this metric, the metric would not focus on attribution and therefore makes it a potentially viable means for estimating progress towards the TMG.

1. **If the Commission’s EM&V should measure energy efficiency initiatives beyond its own programs, how should such activities be coordinated with the CEC?**

Response: If this were done at the statewide level, it may be appropriate for the CEC to lead the effort and incorporate it into the IEPR process.

- B. **Parties note that EM&V impact evaluations, as well as other parts of the current EM&V framework need to provide support for long-term demand forecasts, such as those prepared by the CEC, and used in the Commission’s long-term procurement planning. Should IOUs be directed, and funded through EM&V, to develop disaggregated demand forecasting models that more directly allow energy efficiency program impacts to be included in long-term forecast models?**

1. **Are there additional analytical efforts which could be undertaken to better support the integration of projected energy savings into California’s demand forecasts?**

Response: The Joint Utilities believe that allowing the utilities, and providing appropriate funding, to develop their own disaggregated demand forecasting models and incorporate utility-specific analysis their EE potential is more effective. SDG&E, in its April

2003 Long-Term Resource Plan, developed its own utility-specific component of its Energy Efficiency potential based on the available statewide potential studies at the time and the California's Secret Energy Surplus: The Potential for Energy Efficiency. This provides for a better "bottoms-up" approach to building the utility's long-term resource plan.

The Joint Utilities appreciate this opportunity to provide comments on the issues outlined above and look forward to continuing this dialogue with the Commission and other interested parties.

Dated: July 16, 2010

Respectfully submitted,

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