

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA



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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)

**THE DIVISION OF RATEPAYER ADVOCATES' OPENING
COMMENTS IN RESPONSE TO THE ASSIGNED COMMISSIONER'S RULING
AND SCOPING MEMO, PHASE I**

DIANA L. LEE
Attorney for the Division of Ratepayer
Advocates

California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102
Phone: (415) 703-4342
Fax: (415) 703-2262
E-mail: dil@cpuc.ca.gov

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CHERYL COX
Analyst for the Division of Ratepayer
Advocates

California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102
Phone: (415) 703-3027
E-mail: cxc@cpuc.ca.gov

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I. INTRODUCTION

The Division of Ratepayer Advocates (DRA) submits the following comments in response to the "Assigned Commissioner's Ruling and Scoping Memo, Phase I" (ACR,) issued May 21, 2010. The ACR explains that the objective of the current rulemaking is to update the Commission's energy efficiency evaluation, measurement, and verification (EM&V) framework in preparation for 2013-2015 energy efficiency program cycle in order to ensure effective measurement of energy efficiency resources and progress in achieving the goals of the California Energy Efficiency Strategic Plan (Strategic Plan).¹ This should allow use of the updated EM&V framework as Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Southern California Gas Company (SoCalGas)² begin planning for the 2013-2015 program cycle.

¹ ACR, p. 8.

² DRA's comments refer collectively to PG&E, SCE, SDG&E, and SoCalGas as "Utilities."

The Commission's goals in revising the EM&V framework include not only better measurement of energy efficiency and progress in meeting the Strategic Plan objectives, but also, more timely results, better value to ratepayers, and if possible, a process that is less fraught with controversy. The ACR poses a series of questions designed to inform the process of crafting a more effective EM&V framework.

There are a number of threshold requirements that must first be addressed/met in order for the proposed changes to the EM&V structure to achieve any of the Commission's laudable goals:

- The proposed changes to the EM&V structure should be explored through a transparent stakeholder process, including workshops, that allows discussion of issues and potential program models.
- The Energy Division as the manager of the EM&V process should provide a comprehensive review of other EM&V framework models as a prerequisite to update the California EM&V framework.
- The California Energy Commission (CEC) should be invited to participate to provide its expertise on measuring consumption rates.
- Any new EM&V framework should include well-defined definitions of market transformation criteria.
- Any new EM&V framework must take into account program design, program administrator accountability, the existing EM&V process, and any shareholder incentive mechanism.
- DRA explores the above issues in response to the ACR's questions, as well as its overarching concerns set forth below.

II. DISCUSSION

DRA's responses to some of the questions in the ACR are set forth below. DRA has not responded to all of the questions or subparts, but reserves the right to comment on those questions in its reply comments.

1. D.09-09-047 restated the core objectives for EM&V in the context of 2010-2012 program year savings measurement and verification, program evaluation, market assessment, policy and planning support, and financial and management audits.³

a) Should these objectives be modified or expanded for program years 2013 and beyond?

b) In particular, are these objectives sufficient for the Commission to assess California's progress in achieving the goals of the Strategic Plan and the utilities' contribution thereto?

In D.09-09-047, the Commission amended the goals of EM&V to focus on five core objectives, designed to "support the Commission's oversight function of ensuring the efficient and effective expenditure of ratepayer funds within the energy efficiency portfolios. All activities should be undertaken to meet the overarching goals of clarity, consistency, cost-efficiency, and timeliness."⁴ DRA supports these overarching goals and generally supports D.09-09-047's core objectives for EM&V:

- Savings Measurement and Verification
- Program Evaluation
- Market Assessment
- Policy and Planning Support
- Financial and Management Audit

³ D.09-09-047 at 297-298.

⁴ D.09-09-047, p. 299.

However, some of the descriptions of the core objectives in D.09-09-047⁵ should be expanded to address how EM&V studies should be used going forward. For instance,

- **Savings Measurement and Verification:** DRA agrees with the decision's description of the role of measurement and verification,⁶ but believes that the definition should be modified to add Program Administrator accountability, including any shareholder incentive mechanism that may exist during the post-2012 time period. DRA recommends the following addition (underlined) to the objective:

Savings Measurement and Verification -
Measurement and verification of savings resulting from energy efficiency measures, programs, and portfolios serve the fundamental purpose of developing estimates of reliable load impacts delivered through ratepayer-funded efficiency efforts, allowing the assessment to demonstrate the Program Administrator's effectiveness in delivering savings, and the amount of shareholder incentives that the Utilities should achieve in the event that there is a shareholder incentive mechanism after 2012. Measurement and verification work should reflect a reasonable balance of accuracy and precision, cost, and certainty, and be designed for incorporation into in procurement planning activities

- **Market Assessment:** DRA agrees with the decision's description of the role of market assessment,⁷ but the definition is insufficient to cover the needs of market transformation as described in the Commission's long-term Strategic Plan. While the definition of market assessment in D.09-09-047 describes some components of Market Transformation, it does not specifically name market transformation as a key goal. The definition should be modified to include Market

⁵ Id.

⁶ Id.

⁷ Id., p. 300.

Transformation goals as a clear objective of market assessments. Additionally, it should state that the goal should be to identify a common set of Market Transformation definitions based on CPUC-assigned market indicators. Until a common set of definitions is sanctioned by the Commission, parties will continue to argue from their various perspectives whether a given measure or strategy continues to require ratepayer subsidies. The implications of not establishing a common set of criteria will be that programs that no longer need subsidies will continue to reside in energy efficiency portfolios rather than transitioning energy efficiency funds to newer technologies that would expand energy savings that would not otherwise occur without the subsidies. It is essential to modify this definition and actively pursue Market Transformation goals and criteria if the Commission is to achieve the goals of its Strategic Plan. DRA's changes are underlined below.

Market Assessment: In a constantly evolving environment, market assessments are an essential EM&V product needed to set the baseline for strategic design and improvement of programs and portfolios. Saturation studies, surveys of emerging technologies and other such analyses which inform estimates of remaining program potential and forward-looking goal-setting are key aspects of market assessment. 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.

2. **In light of changes in energy efficiency activities since 2006, particularly new non-utility service offerings, funding mechanisms, and additional policy objectives, what are the most important changes, if any, that should be made to the “California Evaluation Framework”⁸ and “California Energy Efficiency Evaluation Protocols”²?**
 - a) **Should existing Protocols be amended? If so, how and why?**
 - b) **Should additional methodologies be added to the Protocols? If so, what methodologies should be added, how, and why?**

DRA believes that the EM&V Framework and Protocols should be updated to include methodologies to measure energy Consumption and Market Transformation. However, it is unclear what portion of the Framework and Protocols would remain relevant once those methodologies were added. The result of simply layering Consumption and Market Transformation methodologies on the existing EM&V framework might be extraneous EM&V that provides little value to ratepayers. Developing the ideal mix of new and existing EM&V methodologies is likely a complex process that would benefit from workshop presentations from Energy Division and its EM&V evaluators, as well as presentations from subject matter experts of relevant models such as the CEC, Northeast Energy Efficiency Partnership’s (NEEP), Northwest Power and Conservation Council’s (NWPPCC) and the Northwest Energy Efficiency Alliance (NEEA)

Consumption: DRA has long supported expanding the definition of energy efficiency program success to include demonstrated decrease in energy consumption. While current impact study techniques may continue to provide valuable information, DRA does not believe that simply counting the sum of energy savings predicted from

⁸ ftp://ftp.cpuc.ca.gov/Egy_Efficiency/CaliforniaEvaluationFrameworkSept2004.doc

² California Energy Efficiency Evaluation Protocols
(ftp://ftp.cpuc.ca.gov/puc/energy/electric/energy+efficiency/em+and+v/EvaluatorsProtocols_Final_AdoptedviaRuling_06-19-2006.doc)

efficient widgets can be equated with or ensure a commensurate decrease in consumption rates. Consumers could instead increase personal energy consumption, thereby creating a rebound effect that would negate overall energy savings. For instance, customers might be more focused on targeting their energy use around a set monthly budget associated with their monthly utility bill, rather than saving energy. Consumers might also conserve energy because of high electricity bills.¹⁰ A methodology to address consumption patterns should address such issues as these.

Market Transformation: The Framework and Protocols should also be updated to include Market Transformation. The Commission should look to NEEA as a basis for assessing how to implement market transformation measurement practices.

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¹⁰ California energy efficiency programs have relied on CFL's to achieve much of their savings to date. Additional energy efficiency savings will be more expensive for consumers to achieve. Without more pragmatic strategies such as financing, it is not clear that high electricity costs alone will motivate participation in higher cost energy efficiency programs.

- 3. The Commission has been made aware of two methodologies that may be used to produce an aggregate-level metric of energy efficiency impact on consumption over time. The first has been introduced by the Natural Resource Defense Council.¹¹ The second was recently published online in the journal Energy Efficiency.¹² Both metrics resemble the proposed metric which D.10-04-029 directs be developed on a pilot basis.¹³ Please comment on whether it would be useful for the Commission to use such a metric?**
- a) What are the advantages and limitations of such a metric?**
 - b) What challenges are associated with adding this metric to our existing EM&V methodological framework?**
 - c) Please provide specific analysis on the referenced methodologies.**

DRA supports utilizing a methodology to measure energy efficiency program impacts on decreasing consumption in California at an aggregate level. The Horowitz article referenced in the ACR “Measuring the savings from energy efficiency policies: a step beyond program evaluation” (Horowitz) offers some interesting ideas for measuring the impact of energy efficiency programs on consumption in California. However, Horowitz assumes regulatory policies as a key baseline indicator for measuring success, yet energy efficiency policies in California have undergone significant changes since Utilities have administered energy efficiency programs. The Commission’s energy

¹¹ “Exploring Strategies for Implementing a Performance Based State Efficiency Program: State Energy Consumption Metrics – Residential Sector Analyses” Sheppard, Chamberlain, and Jacobson. (Original report: http://www.schatzlab.org/projects/psep/files/uploads/report/Res_ECI-NRDC-SERC-May15_09.pdf; Addendum: http://www.schatzlab.org/projects/psep/files/uploads/adenda/PSEP_Revised_Methods_Results_Dec2_09.pdf)

¹² “Measuring the savings from energy efficiency policies: a step beyond program evaluation.” Horowitz, M.J. April 2010. (<http://www.springerlink.com/content/120908/?Content+Status=Accepted>)

¹³ See D.10-04-029, Attachment 1, page 29-30, EM&V Project Number 12: Energy Consumption Surveys” from the Energy Division/IOU 2010-2012 Joint EM&V Plan.

efficiency policy objectives have changed significantly over the past several years. Accordingly, the policy baseline has not remained stable, which might make it difficult to measure energy consumption accurately and may create a false perception of program success.

In general, DRA believes that Horowitz' suggested methodologies are technical and complex and would dramatically change the dynamic of EM&V for energy efficiency programs by introducing a radically different way of measuring program results. Yet under the procedural schedule and scope that the ACR envisions,¹⁴ a dramatically revised EM&V process could result based upon an insufficient stakeholder process and without commensurately updating program design. Without a workshop process that thoroughly explores various options and ramifications, DRA cannot endorse any particular updated EM&V framework option at this time.

Accordingly, the Commission should convene workshops that present various models, experts, and provide a forum for a stakeholder dialogue. An interactive forum is essential to fully explore any new EM&V in the context of program design, accountability, and the shareholder incentive mechanism in order to prevent unintended consequences.

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¹⁴ ACR, p. 13.

4. **D.09-09-047 cites efforts underway in the northeast and northwest to develop more collaborative approaches to EM&V¹⁵ and suggests California may benefit from these and similar efforts.**
- a) **Are there other states, regions, or industries that have, or are developing, approaches to EM&V that may offer benefits to California’s energy efficiency EM&V in the future? If so, how?**
 - b) **Please comment specifically on efforts under way within the Northeast Energy Efficiency Partnership’s (NEEP) Regional Evaluation, Measurement and Verification Forum and Northwest Power and Conservation Council’s (NWPCC) Regional Technical Forum (RTF).**
 - c) **What specific approaches or methods would be most important for California to consider, and why?**
 - d) **How do others address issues of “attribution” and “cost-effectiveness” in determining the outcome and value of ratepayer supported energy efficiency program expenditures?**

The Northwest Energy Efficiency Alliance (NEEA) should be included as a model for EM&V protocol updates related to measuring market transformation.¹⁶ NEEA has been operating across four states in the Northwest for over a decade. Rather than reinventing the wheel to establish Market Transformation protocols, California should look to NEEA successes and lessons-learned as a starting point for developing MT EM&V protocols.

¹⁵ Northeast Energy Efficiency Partnership’s (NEEP) Regional Evaluation, Measurement and Verification Forum, and Northwest Power and Conservation Council’s (NWPCC) Regional Technical Forum (RTP).

¹⁶ <http://www.nwalliance.org/index.aspx>

The Commission should convene workshops and invite experts to present various models and methodologies for discussion, utilizing a process similar to the one that resulted in its Energy Efficiency Strategic Plan. Energy Division as manager of EM&V must be engaged in the dialogue of updating EM&V, particularly to provide context on how the current methodologies should be changed or updated. The Energy Division should develop a white paper on various methodologies (including the report noted in the ACR¹⁷ and in D.09-09-047¹⁸.) The Commission had previously directed Energy Division to “hire a contractor to initiate in 2010 a comprehensive review of current EM&V technical and institutional frameworks.”¹⁹ That process should be completed, distributed publically, and presented to stakeholders in a public workshop. After this process, stakeholders would be more informed and better able to respond to this question so that the Commission has a robust record on which to make changes to the existing EM&V framework. Regardless of updates to EM&V, methodologies should be implemented to ascertain program cost-effectiveness.

5. Can technological innovations (e.g., advanced metering infrastructure) be leveraged to advance our EM&V methodologies? If so, how?

DRA believes the AMI can be leveraged for EM&V purposes as described below, although it is important to consider the capabilities and limitations of AMI:

- Smart electric meters generally provide direct metering of whole-house consumption in one-hour intervals.
- Smart gas meters generally provide direct metering of whole-house consumption in 24 hour intervals
- Smart meters cannot provide data for individual devices like lights or appliances without additional equipment

¹⁷ ACR, p. 11.

¹⁸ D.09-09-047, p. 305.

¹⁹ D.09-09-047, p. 305.

- Once home area network (HAN) network protocols are finalized, the HAN might provide lower-cost metering options using HAN-enabled watt-meters and logging via a HAN-enabled computer
- Until HAN is functional, it is unlikely that evaluators will be able to access AMI data, except through the Utilities' data collection, communication, calculation, and data storage system, which would not provide an independent evaluation of energy or demand impacts
- Development of systems providing feedback of consumption data to customers or evaluators is lagging installation of meters, but the interval data should still be logged and stored by the Utilities. This data could be mined at a later date.

Within these limits, DRA believes that AMI could play a constructive role in the following areas of EM&V:

1. Baseline measurements of consumption (Although residential meters may not currently have "peak hold" capability to allow demand measurement, demand information may be available in the Utilities' billing systems);
2. AMI would allow customers to see the impact of energy efficiency changes before and after installation of a measure, which might cause them to give more accurate subjective answers in response to surveys
3. Metering of energy efficiency changes that significantly reduce whole house consumption, and
4. Potential use of lower-cost HAN based data logging of individual EE measures

6. What efforts underway or anticipated as part of the Joint Energy Division/IOU EM&V Plan for 2010-1012²⁰ would be useful to continue or expand for the 2013-2015 period?

a) What will be the likely direction or outcome?

It is essential that Energy Division continue its neutral, non-financially interested role in managing EM&V and keeping program implementation separate from program evaluation.

III. CONCLUSION

DRA respectfully requests that the Commission thoroughly consider the issues raised in the ACR, and discussed in DRA's comments, so that any new EM&V frame work serves the ultimate objective of enhancing the Commission's oversight of energy efficiency to ensure the appropriate use of ratepayer funds.

Respectfully submitted,

/s/ DIANA L. LEE

DIANA L. LEE

Attorney for the Division
of Ratepayer Advocates

California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
Phone: (415) 703-4342
Fax: (415) 703-4432
Email: dil@cpuc.ca.gov

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²⁰ D.10-04-029, Attachment 1 (http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/116710.pdf)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of **THE DIVISION OF RATEPYAER ADVOCATES’ OPENING COMMENTS IN RESPONSE TO THE ASSIGNED COMMISSIONER’S RULING AND SCOPING MEMO, PHASE 1** the official service list in **R.09-11-014** by using the following service:

E-Mail Service: sending the entire document as an attachment to all known parties of record who provided electronic mail addresses.

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Executed on June 4, 2010 at San Francisco, California.

/s/ NANCY SALYER
NANCY SALYER

N O T I C E

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