

**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 PACIFIC GAS AND ELECTRIC COMPANY (U 39 M)  
TO ASSIGNED COMMISSIONER'S RULING AND SCOPING MEMO, PHASE I**

LISE H. JORDAN  
MICHAEL R. KLOTZ

Law Department  
Pacific Gas and Electric Company  
P.O. Box 7442  
77 Beale Street, MSB30A  
San Francisco, CA 94120  
Telephone: (415) 973-7565  
Facsimile: (415) 973-0516  
E-Mail: [mlke@pge.com](mailto:mlke@pge.com)

Attorneys for  
PACIFIC GAS AND ELECTRIC COMPANY

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In accordance with the May 21, 2010 *Assigned Commissioner's Ruling and Scoping Memo, Phase I* (ACR) Pacific Gas and Electric Company (PG&E) submits the following initial comments.

**I. INTRODUCTION**

PG&E whole-heartedly agrees with the California Public Utilities Commission's (Commission or CPUC) assessment that "Energy efficiency faces new priorities and challenges in an evolving market," and that now is an appropriate time "to take stock of the current framework to ensure that it meets California's needs going forward."<sup>1</sup> PG&E also supports the primary objective of Phase I of this proceeding as stated by the Commission—to prepare for the 2013-2015 energy efficiency (EE) program cycle by "updating the Commission's energy efficiency EM&V and ensuring effective measurement of both efficiency resource objectives and progress in achieving the goals of the Long Term Energy Efficiency Strategic Plan."<sup>2</sup> PG&E believes that the questions enumerated in the ACR are appropriate to consider in meeting this objective.

In addition to submitting initial comments on the questions posed in the ACR, the thrust of PG&E's response relates to the appropriate prioritization of issues in this proceeding and the

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<sup>1</sup> ACR, p.6.

<sup>2</sup> *Id.* at p.8.

manner in which those issues are addressed. Given capped administrative budgets and a focus on delivering energy savings, it is important that both the process and the result for the regulatory issues envisioned by the Commission have the strong objective of simplicity. Parties and Energy Division staff are steadfastly focused on implementation of the 2010-2012 EE portfolio programs. As discussed in these comments, it may be prudent to hire a technical consultant to study many of the questions presented in the ACR, and in particular, to review frameworks in other states and/or counties and present this information to stakeholders through a public process as set forth in D.09-09-047.<sup>3</sup> In addition, before embarking on a comprehensive review of EM&V institutions and frameworks, it may be appropriate to take into account the ongoing efforts of the Statewide IDSM Task Force in assessing an integrated approach to EM&V and consider its interrelationship with current efforts in this proceeding.

## II. PRIORITIZATION OF ISSUES

PG&E submits that before examining broad policy issues or trying to determine which technical updates to evaluation protocols are called for, it is appropriate to first set in place the foundation of the 2013-2015 energy efficiency programs themselves. Similarly, it makes sense to first update the Long Term Energy Efficiency Strategic Plan (Strategic Plan) goals themselves—as called for in this proceeding—before trying to determine how best to measure California’s success in achieving those goals. In PG&E’s response to the March 3, 2010 *Administrative Law Judge’s Ruling Setting Prehearing Conference* in this proceeding (PG&E Response to ALJ Ruling), PG&E set forth the details of its proposal, which recommended examination of cost-effectiveness issues, setting the program goals in coordination with the ongoing energy efficiency incentive proceeding (R.09-01-019), and then establishing a technical protocol to guide measurement of the savings delivered by energy programs.<sup>4</sup> Once it is clear what the updated Strategic Plan calls for and how the success of energy efficiency programs will be measured and incented, it will be possible to

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<sup>3</sup> D.09-09-047, p. 305.

<sup>4</sup> *Pacific Gas And Electric Company’s (U 39 M) Response To Administrative Law Judge’s Ruling Setting Prehearing Conference* (Filed March 15, 2010), at Sec. II, pp.3-6.

determine with a greater degree of success, which technical protocols should be adopted to help measure California's success in achieving those goals and which policies are best suited to advance them. If the Commission decides that it does not want to update the Strategic Plan, it should issue a decision as soon as possible this year to that effect so that parties may move on with the current Plan in hand for planning the 2013-2015 energy efficiency portfolio. It would be inappropriate to update the Strategic Plan in 2011 when parties will already be working on program plans for the 2013-2015 program cycle.

**III. AS SET FORTH IN D.09-09-047, THE COMMISSION SHOULD DIRECT ENERGY DIVISION'S CONTRACTOR TO MAKE RECOMMENDATIONS ON THE SPECIFIC QUESTIONS RAISED IN THE ACR.**

In this ACR, the Commission has requested party comments on fairly broad questions of technical evaluation and policy. To ensure broad support among stakeholders for changes to the EM&V structure and policy that may be adopted in this proceeding, it is critical that there be a forum in which stakeholders can be educated on the specifics of each of these areas, engage in an open and honest exchange of ideas as to which policies and procedures are best suited to California's energy efficiency model, and make informed recommendations to the Commission. The Commission should not attempt to resolve these questions solely through solicitation of party comments.

The Commission contemplated such an approach in D.09-09-047, where the Commission referenced issues now raised in this ACR and directed Energy Division to hire a contractor to conduct a "comprehensive review of current EM&V technical and institutional frameworks" in order to address them.<sup>5</sup> In PG&E's Response to the ALJ Ruling, PG&E noted this mandate in D.09-09-047 and made recommendations for how the Commission should implement such a comprehensive review as follows:

The Commission should involve interested stakeholders at each stage of implementing the details of its review. PG&E proposes that the Commission should assemble a committee of interested stakeholders, including representatives from the IOUs, Energy Division, and other industry groups as the Commission deems

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<sup>5</sup> D.09-09-047, p. 305.

appropriate. This committee would discuss and finalize the scope of work for hiring of any contractors to assist with the EM&V review. In addition, the contractors would present any key deliverables and recommendations to the committee, who would review those materials, hold workshops and/or solicit comments as necessary, and submit a final joint-committee recommendation for Commission resolution of specific issues in accordance with the timeline proposed above.<sup>6</sup>

PG&E appreciates the opportunity to submit initial comments on the issues presented in the ACR. However, PG&E cannot provide comprehensive recommendations on many of these issues within the two-week comment period provided for by the ACR and without first seeking the in-depth expertise of industry experts. PG&E submits that it is appropriate to address these issues through the process set forth in D.09-09-047 rather than attempt to field recommendations on such broad questions solely through submission of party comments. These questions should be the subject of Commission workshops, where subject matter experts on issues of technical evaluation and measurement and the practices of other jurisdictions can educate the stakeholders and provide an opportunity for meaningful dialogue as to the approach that may best suit California's energy efficiency model.

#### **IV. INITIAL COMMENTS ON QUESTIONS PRESENTED IN THE ACR.**

**Question 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.

**Question 1(a):** Should these objectives be modified or expanded for program years 2013 and beyond?

The core objectives for EM&V, savings measurement and verification, program evaluation, market assessment, policy and planning support, and financial and management audit, are reasonable and effectively capture the core elements of the EM&V process. However, the details of these core objectives will need to be examined and updated to align evaluation policy and practice to the current energy efficiency environment.

With respect to measurement and verification, what is measured and how it is measured impact portfolio design and focus. The current focus is to evaluate and incent discrete energy

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<sup>6</sup> PG&E Response to ALJ Ruling, p.6.

efficiency measures rather than taking the multi-influencer (public and private) energy efficiency context into consideration. An increased focus on gross savings and market effects is warranted to address this issue and to further the ability of impact evaluations to measure California's success in achieving the goals of the Strategic Plan. PG&E has proposed addressing technical and policy-related issues pertaining to measurement and verification after issues of cost effectiveness and program goal setting are examined in conjunction with the ongoing incentive proceeding.

In addition, while the core objectives cover the range of evaluation research, improved allocation of evaluation resources is required. The Commission should consider the EM&V funding allocation recommended by the utilities and Energy Division in the *2010 – 2012 Joint Energy Division and IOU Evaluation Measurement and Verification Plan* (Joint Plan), which generally called for allocation as follows: (1) Roughly one-third of evaluation funds should be dedicated to overarching studies conducted for purposes of policy & planning support such as market assessments (e.g., Residential Appliance Saturation Study (RASS), Commercial End-Use Study (CEUS) and Energy Efficiency Potential and Energy Efficiency Goals Study, Incremental Measure Costs work, and evaluation methodological research, etc.) (2) Roughly one-third of funds should be allocated to program formative research (e.g., process evaluation, early EM&V, market assessments and Best Practices etc.) (3) Roughly one-third of funds should be allocated to retrospective impact evaluation work for the purpose of future portfolio planning.

**Question 1(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?

As a preliminary matter, the goals of the Strategic Plan have not yet been updated so it is difficult to provide a definitive recommendation on this question at the time being. In general, in assessing success in meeting Strategic Plan goals, the CPUC should examine the role that utility programs play in the much more complex, multidimensional energy efficiency context that exists today. This will require a paradigm shift away from the attempt to isolate the effect of any one

market actor (resulting in an estimated net-to-gross (NTG) to the review of the combined effects of multiple market actors.

It is also noteworthy that California’s progress towards achieving Strategic Plan goals will best be attained by a mix of formative and impact research. This question presupposes that the primary role of evaluation research is impact research (i.e., to what extent did past programs achieve certain resource savings goals and/or transform markets?) Although impact research is important, on a going forward basis it is formative research (i.e., process evaluations, market assessments, early M&V) that provides ongoing, timely feedback to program/portfolio implementation to optimize energy efficiency product offerings to an ever-changing market.

**Question 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” and “California Energy Efficiency Evaluation Protocols”?

As discussed in Sections II and III above, because it has not yet been determined how the 2013-15 energy efficiency programs will be structured, evaluated or incented, and because the goals of the Strategic Plan have yet to be updated, it is difficult to provide a definitive recommendation on this question at the time being. PG&E submits the following initial comments on this issue.

**Question 2(a):** Should existing Protocols be amended? If so, how and why?

As noted by the Commission in the ACR, the Protocols will need to be amended to address the changes in the energy efficiency environment that have taken place since the Protocols were originally developed. The protocols should also address efforts to integrate energy efficiency, demand response (DR), distributed generation (DG), including solar, and low income energy efficiency (LIEE) programs). More importantly, the manner in which the Protocols are applied will need to be revisited.

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**1. Implementation of the Protocols Needs to Be Revisited for 2013-2015 programs.**

The Commission has noted that given the magnitude of the evaluation process, its completion is a remarkable accomplishment.<sup>7</sup> In addition to completing the evaluation, the Commission should strive to ensure that evaluation results are both reliable and credible if stakeholders are, in fact, to rely on them to measure success in achieving California's energy efficiency goals and promote the role of energy efficiency as first in the loading order. The basis for the Protocols is to provide a roadmap for achieving reliable and credible evaluation results and the manner in which the Protocols are implemented will greatly affect their ability to serve this end.

Because of the magnitude of the evaluation process, the depth of the technical process involved, and the continual, technical decision-making required to make evaluations function properly, impact evaluations need to be managed by evaluation experts, rather than by a regulatory body such as Energy Division. This recommendation is not meant to suggest that Energy Division should not manage these evaluations because it is somehow not representative of an independent body—a point the Commission has made clear in the past. It is simply intended to acknowledge that the hands on, day-to-day management of impact evaluations requires daily technical decisions regarding proper application of evaluation protocols and methodologies, as well as similar technical direction regarding the subsequent analyses of data that is not within the scope of expertise of an entity charged with regulatory oversight.

Effective implementation of the Protocols also demands a transparent process that is subject to meaningful peer review. In addition to the technical specifications of evaluations being managed by those with specific evaluation expertise, evaluation managers must also have the resources available to make all supporting data available for review and to engage in a meaningful peer review process and dialogue regarding evaluation results. While the Commission correctly noted that Energy Division was able to complete the evaluations process, it became apparent

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<sup>7</sup> ACR, p.7.

through evaluation of the 2006-2008 energy efficiency programs evaluations that in addition to its many other responsibilities, Energy Division does not have the internal resources at its disposal to ensure a sufficient peer-review process at the same time it is also attempting to finalize an evaluation report of this scale. It would be more appropriate to delegate these tasks directly to industry experts, charged with one responsibility only—the evaluation effort. Energy Division should continue its regulatory oversight of the evaluation process, providing a forum for these industry experts to conduct an open, peer-review of the evaluation policies, procedures, research and results (i.e., hosting early feedback and information sharing meetings, evaluation status reports and dispute resolution sessions.)

**2. Evaluation In California (Including The Protocols And Framework) Should Be Updated To Reflect Today’s Context.**

The State of California has 35 years of experience in promoting energy efficiency. The success of these promotions has led to a market that is vastly sophisticated and a citizenry that is interested and engaged in energy efficiency activities. To maximize energy savings, publicly-funded energy efficiency efforts and the policies governing evaluation need to acknowledge the qualities of this market.

Specifically, California’s efforts are reinforced by many other influences including: actions in other states and at the federal level, competing forces of globalization and corporate sustainability/responsibility, and public awareness and interest in doing something about global climate change. Together, these influences have led to a worldwide contextual change in how major businesses position themselves in markets and customers focus on energy efficiency.

The California Evaluation Protocols and Framework cannot ignore these market dynamics and societal context. The current protocols and framework were developed for application to a simpler societal context where attribution to specific interventions was easier to evaluate.<sup>8</sup> They assume that California’s public purpose program funded interventions were the prime initiators affecting change in the energy efficiency space. Key evaluation professionals who authored the

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<sup>8</sup> ACR, p.9

Protocols and Energy Division staff have recognized that the current context requires a paradigm shift that fosters leveraging these new market dynamics and societal context to maximize the energy savings impacts of publicly-funded energy efficiency interventions.<sup>9</sup>

If self-report estimates of free ridership are to continue, protocols and methodologies need updating given the new landscape of energy efficiency. Practicing effective marketing and sales, programs often "sell" efficiency projects based on widely varying customer priorities (including productivity, quality, comfort, product differentiation, maintenance, health, speed, emissions, etc.) Evaluation protocols and methodologies need to be updated to recognize that projects sold in this manner are not necessarily free riders, even when a customer's motivation for implementation is not primarily efficiency related. Further, in the current market, asking whether a customer would have installed a particular energy efficiency project based solely on a utility program or incentive is simply an outdated inquiry, which undermines the utilities' ability to achieve as much cost effective energy efficiency as possible in support of Strategic Plan goals.

### **3. In General, Policy Rules Governing Evaluation Analyses Need to Be Clarified**

One of the takeaways from the 2006-08 impact evaluations of energy efficiency programs was that policy directives had significant effects on the study results despite the fact that many such directives were not likely to produce unbiased and widely accepted results. PG&E references some of the most important examples of clarifications needed to ensure reliable evaluation results.

Baseline Conditions – The protocols need to clarify how to determine and document baseline conditions. This may include guidelines and principles on baseline determination. For large projects, this could include improved access by impact evaluators significantly earlier in the project cycle to capture key data and/or review of project documentation.

Economic Conditions - The current economic downturn resulted in premise conditions that resulted in lower—and likely inaccurate—estimates of lifetime savings estimates for particular

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<sup>9</sup> See papers by Nick Hall and Tim Drew at 2009 IEPEC meeting, and White Papers on Behavior sponsored by CPUC under CIEE management, and Rafael Friedmann's papers at ACEEE 2006, 2008, IEPEC 2007, 2009; AESP 2007, 2008, 2009 and CPUC-ED April 2009 White Paper.

measures. However, evaluation policy required assessing savings at current conditions and extrapolating these for the life of the measure.

Net-to-Gross (NTG) – As discussed above, NTG, especially as defined in California (NTG = 1 – Free Ridership) is a poor indicator of program success. Its accuracy and precision are at best questionable in today’s multi-influence context.

Spillover - The prescription not to count spillover means that yesterday’s spillover becomes today’s baseline. As a result, not counting spillover hits program savings attribution twice. This prescription also discourages portfolio administrators from operating energy efficiency programs that seek to leverage and/or partner with other trade allies and/or state/federal resources, which leads to lower and costlier savings.

Limits of Evaluation Results - California policymaking should acknowledge and incorporate the fact that evaluation results are estimates that will always have some level of uncertainty.

Integration – efforts by the Statewide Integrated Demand Side Management (IDSMD) Task Force to establish integrated approaches to cost-effectiveness and EM&V methodologies as part of its mandate from the Commission are not considered in the current Protocols.

**Question 2(b):** Should additional methodologies be added to the Protocols? If so, what methodologies should be added, how, and why?

Generally, as discussed above, the Protocols should encompass a more holistic perspective of the current market and societal context. Protocols are needed that result in evaluations that better understand and measure the influence of non-energy factors leading to customer adoption of energy efficiency are needed. This will further enable program interventions to position their offerings with messages that speak to what is on customers’ minds and result in more cost-effective energy savings. Current evaluation efforts and methods (and therefore program designs) are mostly based on the Physical-Technical-Economic Model (PTEM) view of barriers to customer action.<sup>10</sup> The PTEM framework provides an incomplete understanding of human

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<sup>10</sup> See e.g. Michael J. Sullivan (2009). "Behavioral Assumptions Underlying Energy Efficiency Programs for Businesses." White paper prepared for CIEE and the California Public Utilities Commission. January. Berkeley: California Institute for Energy and Environment. Available at [http://uc-ciee.org/energyeff/documents/ba\\_ee\\_prog\\_bus\\_wp.pdf](http://uc-ciee.org/energyeff/documents/ba_ee_prog_bus_wp.pdf)

See also Frank, Andy "Residential Energy Efficiency: It's the Behavior, Stupid," May 11, 2009, available at [http://www.energypulse.net/centers/article/article\\_display.cfm?a\\_id=2036](http://www.energypulse.net/centers/article/article_display.cfm?a_id=2036)

behavior. Finally, the Protocols need to incorporate advancements from the social sciences. Methods are needed that will improve understanding of non-energy motivators (examples include social networks, customer decision-making, and key leverage points to-action). <sup>11</sup>

**Question 2(c):** Should the Commission add methodologies to measure non-energy benefits such as GHG impact, economic impact, or job creation?

Determining whether and how Non-Energy Benefits (NEBs) should be accounted for is an issue that will require substantial investigation. As noted in Section III above, this issue should be resolved through the process directed by the Commission in D.09-09-047. PG&E provides the following initial comments regarding potential issues to consider in approaching this question.

The impact on Procurement needs to be addressed if the intent is to monetize the NEBs of energy efficiency. Energy efficiency should be measured on a level playing field with Procurement so that all externalities (benefits and costs) are first aligned with other demand-side resources (e.g., DR, DG, and LIEE) and then with supply resources.

Examination of NEBs should begin with the presentation of the work done for NEBs in the LIEE program. PG&E understands that a presentation of the NEBs analysis was presented to LIEE stakeholders last month and believes that analysis should be shared with the energy efficiency stakeholders to see which findings are appropriate for energy efficiency. Examination of NEBs should continue with work done in the DG proceeding where different GHG values/adders were adopted, and in DR where NEBs are currently being considered. The

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<sup>11</sup> Lutzenhiser, Loren: Social and Behavioral Aspects of Energy Use. Annual Review of Energy and the Environment (1993): v. 18, pp. 247-289;

Stern, P.C., and Aronson, E. (Eds.): Energy use: The human dimension (1984), New York: Freeman;

Lutzenhiser, Loren. Explaining Consumption: The Promises and Limitations of Energy and Behavior Research, ACEEE 1990 Summer Study on Energy Efficiency in Buildings, American Council for an Energy Efficient Economy, Washington D.C;

Stern, P.C., Dietz, Thomas, Ruttan, Vernon W, Socolow, Robert H., and Sweeney, James (Eds.): Environmentally Significant Consumption: Research Directions (1997). National Research Council, Committee on the Human Dimensions of Global Change. Washington, DC: National Academy Press.

Commission should review other adopted NEBs in its analysis of whether and what NEBs should apply to energy efficiency programs.

**Question 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. The second was recently published online in the journal Energy Efficiency. Both metrics resemble the proposed metric which D.10-04-029 directs be developed on a pilot basis. Please comment on whether it would be useful for the Commission to use such a metric?

**Question 3(a):** What are the advantages and limitations of such a metric?

The inherent advantage of such a metric is that it eliminates the need for application of controversial net-to-gross assumptions. That said, the inherent limitation of such a metric is that factors outside of the energy efficiency arena could skew the perceived effect of the energy efficiency programs themselves. Economic trends, weather, population changes, transportation growth (including electrification of transportation), increased use of solar generation, and shifts in manufacturing are but a few of the external factors that could sway energy consumption more so than energy efficiency programs in a given year. Therefore, the accuracy of counting energy efficiency based on overall consumption could prove to be as controversial a proposition as applying net-to-gross assumptions. Attempts to isolate the effect of energy efficiency on consumption as compared to the effect of these other factors would be difficult and subject to a great deal of uncertainty. Further, it appears that the NRDC proposal only covers the residential and commercial sectors, while the goals currently set for the IOUs include the industrial sector. This discrepancy would need to be resolved.

**Question 3(b):** What challenges are associated with adding this metric to our existing EM&V methodological framework?

Adding such a metric presents several challenges. The metric focuses only on past measurement, and therefore, does not address the need for additional emphasis on formative research to support program planning and achieving the goals of the Strategic Plan.

If the Commission insists in further exploring consumption-based monitoring, it must be clear upfront in how the other factors, such as electrification of vehicles and weather adjustments,

etc, will be adjusted to provide a reasonable value for efficiency. Again, PG&E urges the Commission to keep the process and the calculation of results as simple and straightforward as possible.

**Question 3(c):** Please provide specific analysis on the referenced methodologies.

Analysis of the referenced methodologies is provided in response to Subpart a. of this question.

**Question 4:** D.09-09-047 cites efforts underway in the northeast and northwest to develop more collaborative approaches to EM&V and suggests California may benefit from these and similar efforts.

As discussed in Section III above, this question and its subparts requires a broad examination of the practices of other jurisdictions and their relevance to California's energy efficiency model. As such, this question should be addressed pursuant to the procedure set forth in D.09-09-047. This question merits in depth workshops where experts in the practices of other jurisdictions share their knowledge of their respective successes and failures and the stakeholders can discuss approaches that might successfully be integrated into California's model. That said, PG&E submits the following initial comments.

**Question 4(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?

There are a variety of approaches used across the United States today to estimate the savings obtained from public purpose EE programs. Key jurisdictions to examine are areas with long-term EE public programs such as NEEP, NEEA, MEEA, NY, VT and also newcomers such as the SE and SW.

Some regions focus on total gross savings and place less emphasis on determining attribution to specific programs (e.g. NWPPC). In these regions, the focus of EM&V is either to assign attribution based on funding sources or other metrics, or to shift the focus away from attribution as a key measure of program success.

Some regions focus on net savings and carry out research to estimate a NTG ratio. However, NTG ratios are often calculated differently than in California, with many areas including spillover and free-ridership assessments or at times using ex-ante values. For example, for New York's ratepayer funded System Benefits Charge and Energy Efficiency Portfolio Standard (EEPS) programs, free ridership and spillover are required elements of the evaluation approach (see [http://www.dps.state.ny.us/Evaluation\\_Guidelines.pdf](http://www.dps.state.ny.us/Evaluation_Guidelines.pdf)). EEPS technical guidelines prescribe a 0.9 net-to-gross adjustment for new programs that have yet not undergone evaluation to determine a program specific net-to-gross ratio. For the EEPS funded programs, with few exceptions, New York's Commission/DPS have indicated that all funded measures and projects should meet a minimum Total Resource Cost test ratio of 1.0.

PG&E agrees that it is important to review efforts in other jurisdictions to develop a more collaborative and open process for the impact evaluation effort. The Joint Plan calls for such increased communication and collaboration. New York has set up a working group of evaluation practitioners and users to continuously review evaluation practice and process. The Commission should direct Energy Division and the utilities to establish such a group, which should include a broad spectrum of industry stakeholders, and require it to meet with an appropriate level of frequency.

In looking to other industries, measurement and evaluation techniques from the sales industry seems to be relevant to energy efficiency. As discussed above, the utilities often "sell" programs to customers based on various customer interests and motivations. The utilities are responsible for making sure that customers buy efficient measures and that utility programs remain cost-effective. EM&V procedures and monitoring should revolve around a simple model focusing on the question of--did the IOUs "sell" efficient items? In the sales industry, it does not matter how many particular items you sold (envelopes or staplers) or what motivated a customer to buy them. What is relevant to the sales industry is that profit targets were met. In the context of energy efficiency, this would be the monetized net benefit of the energy efficiency program. The



Commission should focus on how many efficient items were sold and how the utility minimized its cost to deliver those items.

**Question 4(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).

PG&E's understanding of the NEEP effort is that it is focused on resolving differences for how savings are determined across the various states in NEEP. Its core value is building consensus between evaluation experts on how to evaluate the multitude of programs and optimize research resources.

The NWPCC RTF is a group of experts who work to reach consensus on the ex-ante savings values for specific deemed measures (akin to DEER). Such an approach would be beneficial to foster increased transparency, peer review and stakeholder consensus in reviewing and updating DEER values in California. As an example of the success of such an approach, the Commission should look to the demonstrated success of the collaborative processes underway to improve the development and review of workpapers for Non-Deemed measures.

**Question 4(c):** What specific approaches or methods would be most important for California to consider, and why?

California should look to methods of increasing collaboration that foster transparency of developing evaluation assumptions and protocols, and application of those protocols to particular evaluation efforts. To ensure that California is applying best evaluation practices and using logical and accurate assumptions, the Commission should strive to include a group of evaluation experts to advise on evaluation matters (methods, adequacy of documentation for evaluation, review of ex-ante savings estimates, etc.) Most importantly, the Commission should work with stakeholders to require the opportunity for meaningful peer review of all aspects of the energy efficiency evaluation by a broad coalition of stakeholders and industry experts. The single biggest obstacle to achieving both reliable and credible evaluation results, as well as achieving a true collaborative process, is a pervasive rhetoric that rigorous peer review is somehow an affront to Energy

Division's independence or competency, or that it is otherwise motivated by concerns related solely to incentive earnings. In contrast, evaluation methodologies and results must be subject to transparent and rigorous peer review if the science of evaluation and the measurement of California's successes in achieving its ambitious energy efficiency goals is to have credibility under any standard. Among other things, meaningful peer review requires that leading industry experts are free of sweeping conflict of interest rules that prevent them from engaging in critical discussion of the evaluation results. California should review other jurisdictions' peer review processes and ascertain how they balance the need for participation of industry experts in evaluation, while reasonably addressing concerns around conflict of interest.

**Question 4(d):** How do others address issues of “attribution” and “cost effectiveness” in determining the outcome and value of ratepayer supported energy efficiency program expenditures?

PG&E addressed the issue of attribution in response to subpart (a) of this question.

“Cost effectiveness” of the portfolio in almost all cases uses a benefit-to-cost analysis. The key differences are in what is included in the benefits and/or costs, how these are tabulated, and/or what value is ascribed to various components. Many of these costs and benefits are state and region-specific. The appropriate components to include and how they are valued should be determined via workshops or other collaborative process. The values and the components should also be reviewed periodically to ensure they are valid. Further, the examination of cost effectiveness should include an assessment of what metric is being used in other states (TRC, PAC, etc.)

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

Advanced metering infrastructure will likely improve the evaluator's capability to measure and evaluate energy efficiency measures. More granular time-differentiated data obtained from advanced metering deployments will provide evaluators with a significantly improved understanding of customers' energy use characteristics at different times of the day and during

particular days in each month allowing evaluators to better assist program designers and implementers in improving the efficacy of energy efficiency programs. New analysis methodologies that include evaluation of impacts of EE measures on peak as well as energy will be developed. Segmentation of customers by interval energy use characteristics in analysis will aide evaluators in quantifying the impact of different occupancy and energy use patterns with EE measure impacts. In addition, advanced metering infrastructure may reduce the need for on-site M&V efforts. Given the exponential increase in available data, sampling will still be required and sampling strategies will need to be adjusted. Early in the deployment of advanced metering only whole building (or home) metered data are available. As Home Area Network (HAN) communications standards are developed, meters are enabled, and customers adopt on-premises HAN devices, manufacturers will produce consumer goods capable of communicating with these networks thereby allowing for the measurement at the end-use level. To realize the potential benefits of AMI, evaluation will still be needed to understand customers' behaviors to determine how to best tap savings opportunities. In addition, the cost to mine and analyze data from AMI for EE objectives will need to be assessed and included in the 2013-15 EM&V budget.

**Question 6:** What efforts underway or anticipated as part of the Joint Energy Division/IOU EM&V Plan for 2010-1012 would be useful to continue or expand for the 2013-2015 period?

For the most part, evaluation efforts described in the Joint Plan are not yet underway and therefore, it is difficult to make recommendations regarding which of these should be continued or expanded for the 2013-2015 program cycle. In addition, as described in Section II above, it has not yet been determined how 2013-2015 energy efficiency programs will be structured, evaluated or incented. PG&E offers the following initial comments.

**Question 6(a):** What will be the likely direction or outcome?

The Joint Plan makes recommendations regarding planning the 2010-12 EE programs including prioritizing EM&V activities, determining the appropriate budget for EM&V, and allocating that budget for various categories of EM&V activities.<sup>12</sup> The stakeholders should

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<sup>12</sup> See Joint Plan, *passim*.

revisit these recommendations after issues of cost effectiveness, program goals and program incentives for the 2013-15 programs have been finalized and the 2013-15 EE programs are planned.

PG&E anticipates that ongoing market transformation research will continue to be needed in 2013-2015 to support the Strategic Plan. In addition, regardless of the structure of the 2013-2015 portfolios, the efforts in the Joint Plan to create an atmosphere of genuine collaboration will continue to be an important component of any evaluation effort and should be continued into 2013-15<sup>13</sup>. This should include ongoing discussions on evaluation policies and procedures, as well as open workshops on evaluation issues.

**Question 7:** D.09-09-047 stated that this review of EM&V practices should include consideration of the needs and activities of the California Energy Commission, municipal utilities, and California Air Resources Board. Please comment on what changes, if any, should be made to the Commission's EM&V policy and methodological framework to meet the needs of these entities?

**Question 7(a) :** Do existing metrics adequately account for GHG reductions?

Existing metrics do not adequately account for GHG reductions. This issue should be further examined in NEB or cost effectiveness workshops as discussed above.

**Question 7(b):** Do existing metrics meet the CEC's needs in load forecasting? If not, what changes are required to better assess energy efficiency's impact on future energy demand?

The existing metrics do not meet CEC's needs for load forecasting for two reasons. First, the CEC needs to know which values should be used from impact evaluations to make reliable load forecasting projections for the future. Given the difference between the utility reported values and the Energy Division's recently released final true-up analysis, there is considerable uncertainty around the EM&V results. When the CPUC revises DEER and other ex ante values, it yields a variety of numbers resulting in the CEC not being able to accurately determine historic energy efficiency savings to support the projection of what load PG&E needs to secure for the future. Second, the CPUC has typically had a 2-3 year lag from program year completion to the time it

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<sup>13</sup> See *Id.* at pp. 2-5.

releases evaluation results. This acts as an obstacle for the CEC to project load forward in a timely fashion.

**Question 7(c):** Are there any steps the Commission should take to better integrate and coordinate EM&V activities with the other California entities?

Entities in California seem to be using different underlying assumptions to base efficiency forecasts. The Commission could add significant value if it were to bring these agencies together to use the latest assumptions in basing efficiency forecasts. This may result in changes to the current forecasts used by the CEC and ARB, and may also result in changes to the IOU goals for future years.

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## V. CONCLUSION

PG&E appreciates the opportunity to submit these initial comments. PG&E recommends that (1) as set forth in D.09-09-047 and in PG&E's response to the March 3, 2010 *Administrative Law Judge's Ruling Setting Prehearing Conference*, the Commission (1) first address issues of cost-effectiveness, set the program goals for the 2013-15 program cycle, and coordinate with the ongoing energy incentive proceeding; (2) then direct Energy Division to hire a contractor to conduct a comprehensive evaluation of the issues raised in the ACR. The findings of the evaluation should be presented to stakeholders in a series of workshops designed to educate stakeholders and to determine which policies are most appropriate for adoption into the California model, after which the Commission should solicit written party comments regarding the recommendations that should be adopted in preparing a Proposed Decision on Phase I of this proceeding.

Respectfully submitted,

LISE H. JORDAN  
MICHAEL R. KLOTZ

By: \_\_\_\_\_ /s/  
MICHAEL R. KLOTZ

Law Department  
Pacific Gas and Electric Company  
P.O. Box 7442  
77 Beale Street, MSB30A  
San Francisco, CA 94120  
Telephone: (415) 973-7565  
Facsimile: (415) 973-0516  
E-Mail: [mike@pge.com](mailto:mike@pge.com)

Attorneys for  
PACIFIC GAS AND ELECTRIC COMPANY

Dated: June 4, 2010

CERTIFICATE OF SERVICE BY ELECTRONIC MAIL

I, the undersigned, state that I am a citizen of the United States and am employed in the City and County of San Francisco; that I am over the age of eighteen (18) years and not a party to the within cause; and that my business address is 77 Beale Street, San Francisco, California 94105

On June 4, 2010, I served a true copy of:

**COMMENTS OF PACIFIC GAS AND ELECTRIC COMPANY (U 39 M)  
TO ASSIGNED COMMISSIONER'S RULING AND SCOPING MEMO, PHASE I**

- [XX] By Electronic Mail – serving the enclosed via e-mail transmission to each of the parties listed on the official service lists for R. 09-11-014 with an e-mail address.
- [XX] By U.S. Mail – by placing the enclosed for collection and mailing, in the course of ordinary business practice, with other correspondence of Pacific Gas and Electric Company, enclosed in a sealed envelope, with postage fully prepaid, addressed to those parties listed on the official service lists for R. 09-11-014 without an e-mail address.

I certify and declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 4<sup>th</sup> day of June, 2010, at San Francisco, California.

\_\_\_\_\_  
/s/  
ANNABEL STRIPLIN

# THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA SERVICE LIST

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## CPUC DOCKET NO. R0911014

Total number of addressees: 103

CASE COORDINATION

**PACIFIC GAS AND ELECTRIC COMPANY**

77 BEALE ST., PO BOX 770000 MC B9A  
SAN FRANCISCO CA 94177

FOR: Pacific Gas and Electric Company

Email: RegRelCPUCcases@pge.com

Status: INFORMATION

JENNY GLUZGOLD

**PACIFIC GAS & ELECTRIC CO.**

77 BEALE ST, B9A

SAN FRANCISCO CA 94105

FOR: Pacific Gas and Electric Company

Email: yxg4@pge.com

Status: INFORMATION

ROGER GOLDSTEIN

**PACIFIC GAS AND ELECTRIC COMPANY**

PO BOX 7442

245 MARKET ST, B9A

SAN FRANCISCO CA 94120

FOR: Pacific Gas and Electric Company

Email: rfg2@pge.com

Status: INFORMATION

LISE JORDAN

**PACIFIC GAS & ELECTRIC COMPANY**

PO BOX 7442

SAN FRANCISCO CA 94120

FOR: Pacific Gas and Electric Company

Email: lhj2@pge.com

Status: INFORMATION

SANDY LAWRIE ENERGY PROCEEDINGS

**PACIFIC GAS AND ELECTRIC COMPANY**

PO BOX 7442, MC B9A

SAN FRANCISCO CA 94120

FOR: Pacific Gas and Electric Company

Email: slda@pge.com

Status: INFORMATION

CHONDA J. NWAMU ATTORNEY

**PACIFIC GAS AND ELECTRIC COMPANY**

77 BEALE ST, B9A

SAN FRANCISCO CA 94105

FOR: Pacific Gas and Electric Company

Email: cjn3@pge.com

Status: INFORMATION

JONATHAN D. PENDLETON ATTORNEY

**PACIFIC GAS AND ELECTRIC COMPANY**

77 BEALE ST, B30A

SAN FRANCISCO CA 94105

FOR: Pacific Gas and Electric Company

Email: j1pc@pge.com

Status: INFORMATION

SHILPA RAMAIYA

**PACIFIC GAS AND ELECTRIC COMPANY**

PO BOX 7442

77 BEALE ST, MAIL CODE N3A

SAN FRANCISCO CA 94120

FOR: Pacific Gas and Electric Company

Email: SRRd@pge.com

Status: INFORMATION

LAUREN ROHDE

**PACIFIC GAS AND ELECTRIC COMPANY**

77 BEALE ST, MC B9A

SAN FRANCISCO CA 94105

FOR: Pacific Gas and Electric Company

Email: LDRi@pge.com

Status: INFORMATION

SUBID WAGLEY

**PACIFIC GAS AND ELECTRIC COMPANY**

245 MARKET ST, N6G, PO BOX 7442

SAN FRANCISCO CA 94120

FOR: Pacific Gas and Electric Company

Email: s1w2@pge.com

Status: INFORMATION

MICHAEL R. KLOTZ

**PACIFIC GAS AND ELECTRIC COMPANY**

77 BEALE ST, MS B30A, RM 3105B

SAN FRANCISCO CA 94120

FOR: Pacific Gas and Electric Company

Email: M1ke@pge.com

Status: PARTY

Carmen Best

**CALIF PUBLIC UTILITIES COMMISSION**

ENERGY DIVISION

505 VAN NESS AVE AREA 4-A

SAN FRANCISCO CA 94102-3214

Email: cbe@cpuc.ca.gov

Status: STATE-SERVICE

Jordana Cammarata

**CALIF PUBLIC UTILITIES COMMISSION**

ENERGY DIVISION

505 VAN NESS AVE AREA 4-A

SAN FRANCISCO CA 94102-3214

Email: jnc@cpuc.ca.gov

Status: STATE-SERVICE

Jeanne Clinton

**CALIF PUBLIC UTILITIES COMMISSION**

ENERGY DIVISION

505 VAN NESS AVE RM 4008

SAN FRANCISCO CA 94102-3214

Email: cln@cpuc.ca.gov

Status: STATE-SERVICE



# THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA SERVICE LIST

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## CPUC DOCKET NO. R0911014

Total number of addressees: 103

Cheryl Cox  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY PRICING AND CUSTOMER PROGRAMS  
BRANCH  
505 VAN NESS AVE RM 4209  
SAN FRANCISCO CA 94102-3214  
Email: cxc@cpuc.ca.gov  
Status: STATE-SERVICE

Darwin Farrar  
**CALIF PUBLIC UTILITIES COMMISSION**  
DIVISION OF ADMINISTRATIVE LAW JUDGES  
505 VAN NESS AVE RM 5041  
SAN FRANCISCO CA 94102-3214  
Email: edf@cpuc.ca.gov  
Status: STATE-SERVICE

Peter Franzese  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: pcf@cpuc.ca.gov  
Status: STATE-SERVICE

Katherine Hardy  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: keh@cpuc.ca.gov  
Status: STATE-SERVICE

Jean A. Lamming  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: jl2@cpuc.ca.gov  
Status: STATE-SERVICE

Ayat E. Osman  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: aeo@cpuc.ca.gov  
Status: STATE-SERVICE

Anne W. Premo  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
770 L ST, STE 1050  
SACRAMENTO CA 95814  
Email: awp@cpuc.ca.gov  
Status: STATE-SERVICE

Tim G. Drew  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: zap@cpuc.ca.gov  
Status: STATE-SERVICE

Cathleen A. Fogel  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: cf1@cpuc.ca.gov  
Status: STATE-SERVICE

Mikhail Haramati  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: mkh@cpuc.ca.gov  
Status: STATE-SERVICE

Peter Lai  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
320 WEST 4TH ST STE 500  
LOS ANGELES CA 90013  
Email: ppl@cpuc.ca.gov  
Status: STATE-SERVICE

Kim Mahoney  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY PRICING AND CUSTOMER PROGRAMS  
BRANCH  
505 VAN NESS AVE RM 4104  
SAN FRANCISCO CA 94102-3214  
Email: kmb@cpuc.ca.gov  
Status: STATE-SERVICE

Lisa Paulo  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: lp1@cpuc.ca.gov  
Status: STATE-SERVICE

Kristina Skierka  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: ks3@cpuc.ca.gov  
Status: STATE-SERVICE

# THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA SERVICE LIST

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## CPUC DOCKET NO. R0911014

Total number of addressees: 103

George S. Tagnipes  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: jst@cpuc.ca.gov  
Status: STATE-SERVICE

Matthew Tisdale  
**CALIF PUBLIC UTILITIES COMMISSION**  
ELECTRICITY PLANNING & POLICY BRANCH  
505 VAN NESS AVE RM 4104  
SAN FRANCISCO CA 94102-3214  
Email: mwt@cpuc.ca.gov  
Status: STATE-SERVICE

Pamela Wellner  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: pw1@cpuc.ca.gov  
Status: STATE-SERVICE

GERALD LAHR  
**ASSOCIATION OF BAY AREA GOVERNMENTS**  
101 8TH ST, PO BOX 2050  
OAKLAND CA 94607  
FOR: Association of Bay Area Governments  
Email: jerryl@abag.ca.gov  
Status: PARTY

AUDREY CHANG EXEC. DIRECTOR  
**CAL. ENERGY EFFICIENCY INDUSTRY COUNCIL**  
436 14TH ST., STE 1123  
OAKLAND CA 94612  
Email: achang@efficiencycouncil.org  
Status: INFORMATION

STEVEN R. SCHILLER  
**CALIF. ENERGY EFFICIENCY IND. COUNCIL**  
436 14TH ST, STE 1123  
OAKLAND CA 94612  
Email: sschiller@efficiencycouncil.org  
Status: INFORMATION

ANDREW MCALLISTER  
**CALIFORNIA CENTER FOR SUSTAINABLE ENERGY**  
8690 BALBOA AVE, STE 100  
SAN DIEGO CA 92123  
FOR: California Center For Sustainable Energy  
Email: andrew.mcallister@energycenter.org  
Status: PARTY

Zenaida G. Tapawan-Conway  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE AREA 4-A  
SAN FRANCISCO CA 94102-3214  
Email: ztc@cpuc.ca.gov  
Status: STATE-SERVICE

Natalie Walsh  
**CALIF PUBLIC UTILITIES COMMISSION**  
ENERGY DIVISION  
505 VAN NESS AVE RM 4003  
SAN FRANCISCO CA 94102-3214  
Email: nfw@cpuc.ca.gov  
Status: STATE-SERVICE

Michael Wheeler  
**CALIF PUBLIC UTILITIES COMMISSION**  
EXECUTIVE DIVISION  
505 VAN NESS AVE RM 5206  
SAN FRANCISCO CA 94102-3214  
Email: mmw@cpuc.ca.gov  
Status: STATE-SERVICE

CHRIS ANN DICKERSON  
**CAD CONSULTING**  
720B CANYON OAKS DRIVE  
OAKLAND CA 94605  
Email: cadickerson@cadconsulting.biz  
Status: INFORMATION

IRENE M. STILLINGS EXECUTIVE DIRECTOR  
**CALIF. CNTR FOR SUSTAINABLE ENERGY**  
8690 BALBOA AVE., STE 100  
SAN DIEGO CA 92123  
Email: irene.stillings@energycenter.org  
Status: INFORMATION

ROBERT L. KNIGHT  
**CAL. BLDG. PERFORMANCE CONTRATORS ASSN.**  
1000 BROADWAY, STE 410  
OAKLAND CA 94607  
FOR: California Building Performance Contractors  
Association  
Email: rknight@bki.com  
Status: PARTY

JENNIFER GREEN  
**CALIFORNIA CENTER FOR SUSTAINABLE ENERGY**  
8690 BALBOA AVE  
SAN DIEGO CA 92123  
Email: jennifer.green@energycenter.org  
Status: INFORMATION

**THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA SERVICE LIST**

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SEPHRA A. NINOW  
**CALIFORNIA CENTER FOR SUSTAINABLE ENERGY**  
8690 BALBOA AVE, STE 100  
SAN DIEGO CA 92123  
Email: sephra.ninow@energycenter.org  
Status: INFORMATION

**CALIFORNIA ENERGY MARKETS**  
425 DIVISADERO ST., STE 303  
SAN FRANCISCO CA 94117  
Email: cem@newsdata.com  
Status: INFORMATION

BILL JUNKER  
**CALIFORNIA ENERGY COMMISSION**  
1516 9TH ST, MS 22  
SACRAMENTO CA 95819  
Email: bjunker@energy.state.ca.us  
Status: STATE-SERVICE

DON SCHULTZ  
**CALIFORNIA ENERGY COMMISSION**  
1516 9TH ST  
SACRAMENTO CA 95819  
Email: dschultz@energy.state.ca.us  
Status: STATE-SERVICE

SARA STECK MYERS ATTORNEY  
122 28TH AVE.  
SAN FRANCISCO CA 94121  
FOR: Center for Energy Efficiency and Renewable  
Technologies  
Email: ssmyers@att.net  
Status: PARTY

ANN KELLY DEPT. OF THE ENVIRONMENT  
**CITY AND COUNTY OF SAN FRANCISCO**  
11 GROVE ST  
SAN FRANCISCO CA 94102  
Email: ann.kelly@sfgov.org  
Status: INFORMATION

SHAYNA H. HIRSHFIELD  
**CITY OF SAN JOSE-ENVIRONMENTAL SVCS DEP**  
200 EAST SANTA CLARA  
SAN JOSE CA 95113  
Email: Shayna.Hirshfield@sanjoseca.gov  
Status: INFORMATION

ASHLEY WATKINS  
**CALIFORNIA CENTER FOR SUSTAINABLE ENERGY**  
8690 BALBOA AVE. STE 100  
SAN DIEGO CA 92123  
Email: ashley.watkins@energycenter.org  
Status: INFORMATION

SYLVIA BENDER  
**CALIFORNIA ENERGY COMMISSION**  
1516 9TH ST, MS20  
SACRAMENTO CA 95814  
Email: sbender@energy.state.ca.us  
Status: STATE-SERVICE

CHRIS KAVALEC  
**CALIFORNIA ENERGY COMMISSION**  
1516 9TH ST  
SACRAMENTO CA 95831  
Email: ckavalec@energy.state.ca.us  
Status: STATE-SERVICE

PETER CANESSA  
**CALIFORNIA STATE UNIVERSITY, FRESNO**  
1211 CHAPARRAL CIRCLE  
SAN LUIS OBISPO CA 93401  
Email: pcanessa@charter.net  
Status: INFORMATION

CAL BROOMHEAD DEPT OF ENVIRONMENT, ENERGY  
SECTION  
**CITY AND COUNTY OF SAN FRANCISCO**  
11 GROVE ST  
SAN FRANCISCO CA 94102  
Email: cal.broomhead@sfgov.org  
Status: INFORMATION

SHAWN THOMPSON  
**CITY OF IRVINE**  
1 CIVIC CENTER PLAZA  
IRVINE CA 92646  
Email: sthompson@ci.irvine.ca.us  
Status: INFORMATION

MARY TUCKER  
**CITY OF SAN JOSE, ENVIRONMENTAL SRVC DEP**  
200 EAST SANTA CLARA ST., 10TH FLR.  
SAN JOSE CA 95113-1905  
Email: mary.tucker@sanjoseca.gov  
Status: INFORMATION

# THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA SERVICE LIST

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## CPUC DOCKET NO. R0911014

Total number of addressees: 103

SUSAN MUNVES ENERGY AND GREEN BLDG. PROG.  
ADMIN.

**CITY OF SANTA MONICA**

1212 5TH ST, FIRST FLR  
SANTA MONICA CA 90401

Email: susan.munves@smgov.net

Status: INFORMATION

JEANNE M. SOLE

**CITY AND COUNTY OF SAN FRANCISCO**

CITY HALL, RM 234

1 DR. CARLTON B. GOODLET PLACE

SAN FRANCISCO CA 94102-4682

FOR: Ckty and County of San Francisco

Email: jeanne.sole@sfgov.org

Status: PARTY

DON LIDDELL

**DOUGLASS & LIDDELL**

2928 2ND AVE

SAN DIEGO CA 92103

Email: liddell@energyattorney.com

Status: INFORMATION

Diana L. Lee

**CALIF PUBLIC UTILITIES COMMISSION**

LEGAL DIVISION

505 VAN NESS AVE RM 4107

SAN FRANCISCO CA 94102-3214

FOR: DRA

Email: dil@cpuc.ca.gov

Status: PARTY

ANDREW B. BROWN

**ELLISON SCHNEIDER & HARRIS, L.L.P.**

2600 CAPITOL AVE, STE 400

SACRAMENTO CA 95816-5905

Email: abb@eslawfirm.com

Status: INFORMATION

LYNN HAUG

**ELLISON, SCHNEIDER & HARRIS L.L.P.**

2600 CAPITAL AVE, STE 400

SACRAMENTO CA 95816

Email: lmh@eslawfirm.com

Status: INFORMATION

CYNTHIA MITCHELL

**ENERGY ECONOMICS, INC.**

530 COLGATE COURT

RENO NV 89503

Email: ckmitchell1@sbcglobal.net

Status: INFORMATION

MONA TIERNEY-LLOYD SENIOR MANAGER WESTERN  
REG. AFFAIRS

**ENERNOC, INC.**

PO BOX 378

CAYUCOS CA 93430

FOR: EnerNoc, Inc.

Email: mtierney-lloyd@enernoc.com

Status: PARTY

THOMAS P. CONLON PRESIDENT

**GEOPRAXIS**

PO BOX 5

SONOMA CA 95476-0005

FOR: GeoPraxis, Inc.

Email: tconlon@geopraxis.com

Status: PARTY

ERIC LEE

**HARPIRIS ENERGY, LLC**

25205 BARONET ROAD

CORRAL DE TIERRA CA 93908

FOR: Harpiris Energy

Email: eric@harpiris.com

Status: PARTY

JEFF HIRSCH

**JAMES J. HIRSCH & ASSOCIATES**

12185 PRESILLA ROAD

CAMARILLO CA 93012-9243

Email: Jeff.Hirsch@DOE2.com

Status: INFORMATION

ED VINE

**LAWRENCE BERKELEY NATIONAL LABORATORY**

BUILDING 90-400

BERKELEY CA 94720-8136

Email: ELVine@lbl.gov

Status: INFORMATION

G. PATRICK STONER PROGRAM DIRECTOR

**LOCAL GOVERNMENT COMMISSION**

1303 J ST, STE 250

SACRAMENTO CA 95814

Email: pstoner@lgc.org

Status: INFORMATION

JODY LONDON

**JODY LONDON CONSULTING**

PO BOX 3629

OAKLAND CA 94609

FOR: Local Government Sustainable Energy Coalition

Email: jody\_london\_consulting@earthlink.net

Status: PARTY

# THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA SERVICE LIST

Last Updated: June 1, 2010

## CPUC DOCKET NO. R0911014

Total number of addressees: 103

ELIZEBETH RASMUSSEN  
**MARIN ENERGY AUTHORITY**  
3501 CIVIC CENTER DRIVE, RM. 308  
SAN RAFAEL CA 94903  
FOR: Marin Energy Authority  
Email: erasmussen@co.marin.ca.us  
Status: PARTY

DONALD GILLIGAN  
**NATIONAL ASSC. OF ENERGY SVC. COMPANIES**  
1615 M ST, NW  
WASHINGTON DC 20036  
FOR: National Association of Energy Services Companies  
Email: dgilligan@naesco.org  
Status: PARTY

MAX BAUMHEFNER LEGAL FELLOW  
**NATURAL RESOURCES DEFENSE COUNCIL**  
111 SUTTER ST., 20TH FLR  
SAN FRANCISCO CA 94104  
Email: mbaumhefner@nrdc.org  
Status: INFORMATION

PETER MILLER  
**NATURAL RESOURCES DEFENSE COUNCIL**  
111 SUTTER ST, 20TH FLR  
SAN FRANCISCO CA 94104  
Email: pmiller@nrdc.org  
Status: INFORMATION

BRAD KATES  
**OPINION DYNAMICS CORPORATION**  
230 THIRD FLR  
WALTHAM MA 2451  
Email: bkates@opiniondynamics.com  
Status: INFORMATION

MICHAEL SACHSE  
**OPower**  
1515 N. COURTHOUSE RD., STE 610  
ARLINGTON VA 22201  
FOR: OPower  
Email: michael.sachse@opower.com  
Status: PARTY

PUJA DEVERAKONDA  
**POSITIVE ENERGY**  
1911 FORT MYER DRIVE  
ARLINGTON VA 22209  
Email: puja@opower.com  
Status: INFORMATION

**MRW & ASSOCIATES, LLC**  
EMAIL ONLY  
EMAIL ONLY CA 0  
Email: mrw@mrwassoc.com  
Status: INFORMATION

LARA ETTENSON  
**NATURAL RESOURCES DEFENSE COUNCIL**  
111 SUTTER ST, 20TH FLR  
SAN FRANCISCO CA 94104  
FOR: Natural Resources Defense Council  
Email: lettenson@nrdc.org  
Status: PARTY

NOAH LONG  
**NATURAL RESOURCES DEFENSE COUNCIL**  
111 SUTTER ST, 20TH FLR  
SAN FRANCISCO CA 94104  
Email: nlong@nrdc.org  
Status: INFORMATION

JENNIFER BARNES  
**NAVIGANT CONSULTING, INC.**  
1 MARKET ST., SPEAR ST. TWR., STE. 1200  
SAN FRANCISCO CA 94105  
Email: Jennifer.Barnes@Navigantconsulting.com  
Status: INFORMATION

MARY SUTTER  
**OPINION DYNAMICS CORPORATION**  
2415 ROOSEVELT DRIVE  
ALAMEDA CA 94501  
Email: msutter@opiniondynamics.com  
Status: INFORMATION

BRENDA HOPEWELL  
**PORTLAND ENERGY CONSERVATION, INC.**  
1400 SW 5TH AVE, STE 700  
PORTLAND OR 97201  
Email: bhopewell@peci.org  
Status: INFORMATION

STEVEN D. PATRICK  
**SOUTHERN CALIFORNIA GAS COMPANY**  
555 WEST FIFTH ST, GT14G1  
LOS ANGELES CA 90013-1011  
FOR: San Diego Gas & Electric/SoCal Gas  
Email: SDPatrick@SempraUtilities.com  
Status: PARTY

**THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA SERVICE LIST**

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ATHENA BESA  
**SAN DIEGO GAS & ELECTRIC COMPANY**  
8330 CENTURY PARK COURT, CP12F  
SAN DIEGO CA 92123  
Status: INFORMATION

JOY C. YAMAGATA  
**SAN DIEGO GAS & ELECTRIC/SOCALGAS**  
8330 CENTURY PARK COURT, CP 32 D  
SAN DIEGO CA 92123-1530  
Email: JYamagata@SempraUtilities.com  
Status: INFORMATION

SCOTT BLAISING  
**BRAUN BLAISING MCLAUGHLIN, P.C.**  
915 L ST, STE 1270  
SACRAMENTO CA 95814  
FOR: San Joaquin Valley Power Authority  
Email: blaising@braunlegal.com  
Status: PARTY

PEDRO VILLEGAS  
**SEMPRA ENERGY UTILITIES**  
601 VAN NESS AVE, STE 2060  
SAN FRANCISCO CA 94102  
Email: PVillegas@SempraUtilities.com  
Status: INFORMATION

MARILYN LYON SOUTH BAY CITIES COUNCIL OF GOVERNMENTS  
**SOUTH BAY ENVIRONMENTAL SERVICES CTR.**  
15901 HAWTHORNE BLVD., STE. 400  
LAWNDALE CA 90260-2656  
Email: marilyn@sbesc.com  
Status: INFORMATION

RAFI HASSAN  
**SUSQUEHANNA FINANCIAL GROUP, LLLP**  
101 CALIFORNIA ST, STE 3250  
SAN FRANCISCO CA 94111  
Email: rafi.hassan@sig.com  
Status: INFORMATION

STEPHANIE CHEN  
**THE GREENLINING INSTITUTE**  
1918 UNIVERSITY AVE, 2ND FLR  
BERKELEY CA 94704  
Email: stephaniec@greenlining.org  
Status: INFORMATION

ATHENA BESA  
**SAN DIEGO GAS & ELECTRIC COMPANY**  
EMAIL ONLY  
EMAIL ONLY CA 0  
Email: ABesa@SempraUtilities.com  
Status: INFORMATION

THERESA BURKE  
**SAN FRANCISCO PUC**  
1155 MARKET ST, 4TH FLR  
SAN FRANCISCO CA 94103  
Email: tburke@sfwater.org  
Status: INFORMATION

MICHAEL ROCHMAN MANAGING DIRECTOR  
**SCHOOL PROJECT UTILITY RATE REDUCTION**  
1430 WILLOW PASS ROAD, STE 240  
CONCORD CA 94520  
Email: service@spurr.org  
Status: INFORMATION

JACKI BACHARACH EXECUTIVE DIRECTOR  
**SOUTH BAY CITIES COUNCIL OF GOVERNMENTS**  
5033 ROCKVALLEY ROAD  
RANCHO PALOS VERDES CA 90275  
Email: sbccog@southbaycities.org  
Status: INFORMATION

LARRY COPE  
**SOUTHERN CALIFORNIA EDISON COMPANY**  
2244 WALNUT GROVE AVE  
ROSEMEAD CA 91770  
FOR: Southern California Edison  
Email: larry.cope@sce.com  
Status: PARTY

SAMUEL S. KANG  
**THE GREENLINING INSTITUTE**  
1918 UNIVERSITY AVE, SECOND FLR  
BERKELEY CA 94704  
FOR: The Greenlining Institute  
Email: samuelk@greenlining.org  
Status: PARTY

ENRIQUE GALLARDO  
**THE GREENLINING INSTITUTE**  
1918 UNIVERSITY AVE., 2ND FLR  
BERKELEY CA 94704  
Email: enriqueg@greenlining.org  
Status: INFORMATION

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ROBERT FINKELSTEIN  
**THE UTILITY REFORM NETWORK**  
115 SANSOME ST, STE 900  
SAN FRANCISCO CA 94104  
FOR: TURN  
Email: bfinkelstein@turn.org  
Status: PARTY

CRAIG TYLER  
**TYLER & ASSOCIATES**  
2760 SHASTA ROAD  
BERKELEY CA 94708  
Email: craigtyler@comcast.net  
Status: INFORMATION

MEGAN MYERS  
**VASQUEZ ESTRADA & DUMONT LLP**  
1000 FOURTH ST, STE 700  
SAN RAFAEL CA 94901  
Email: mmyers@vandelaw.com  
Status: INFORMATION

CHERYL COLLART  
**VENTURA COUNTY REGIONAL ENERGY ALLIANCE**  
1000 SOUTH HILL ROAD, STE. 230  
VENTURA CA 93003  
Email: cheryl.collart@ventura.org  
Status: INFORMATION

BARBARA GEORGE  
**WOMEN'S ENERGY MATTERS**  
PO BOX 548  
FAIRFAX CA 94978-0548  
FOR: Women's Energy Matters  
Email: wem@igc.org  
Status: PARTY

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abb@eslawfirm.com;ABesa@SempraUtilities.com;achang@efficiencycouncil.org;aeo@cpuc.ca.gov;andrew.mcallister@energycenter.org;ann.kelly@sfgov.org;ashley.watkins@energycenter.org;awp@cpuc.ca.gov;bfinkelstein@turn.org;bhopewell@peci.org;bjunker@energy.state.ca.us;bkates@opiniondynamics.com;blaising@braunlegal.com;cadickerson@cadconsulting.biz;cal.broomhead@sfgov.org;cbe@cpuc.ca.gov;cem@newsdata.com;cf1@cpuc.ca.gov;cheryl.collart@ventura.org;cjn3@pge.com;ckavalec@energy.state.ca.us;ckmitchell1@sbcglobal.net;cln@cpuc.ca.gov;craigtyler@comcast.net;cxc@cpuc.ca.gov;dgilligan@naesco.org;dil@cpuc.ca.gov;dschultz@energy.state.ca.us;edf@cpuc.ca.gov;ELVine@lbl.gov;enriqueg@greenlining.org;erasmussen@co.marin.ca.us;eric@harpiris.com;irene.stillings@energycenter.org;j1pc@pge.com;jeanne.sole@sfgov.org;Jeff.Hirsch@DOE2.com;Jennifer.Barnes@Navigantconsulting.com;jennifer.green@energycenter.org;jerryl@abag.ca.gov;jl2@cpuc.ca.gov;jnc@cpuc.ca.gov;jody\_london\_consulting@earthlink.net;jst@cpuc.ca.gov;JYamagata@SempraUtilities.com;keh@cpuc.ca.gov;kmb@cpuc.ca.gov;ks3@cpuc.ca.gov;larry.cope@sce.com;LDRi@pge.com;lettenson@nrdc.org;lhj2@pge.com;liddell@energyattorney.com;lmh@eslawfirm.com;lp1@cpuc.ca.gov;M1ke@pge.com;marilyn@sbesc.com;mary.tucker@sanjoseca.gov;mbaumhefner@nrdc.org;michael.sachse@opower.com;mkh@cpuc.ca.gov;mmw@cpuc.ca.gov;mmyers@vandelaw.com;mrw@mrwassoc.com;msutter@opiniondynamics.com;mtierney-lloyd@enernoc.com;mwt@cpuc.ca.gov;nfw@cpuc.ca.gov;nlong@nrdc.org;pcanessa@charter.net;pcf@cpuc.ca.gov;pmiller@nrdc.org;ppl@cpuc.ca.gov;pstoner@lgc.org;puja@opower.com;Pvillegas@SempraUtilities.com;pw1@cpuc.ca.gov;rafi.hassan@sig.com;RegRelCPUCCases@pge.com;rfg2@pge.com;rknight@bki.com;s1w2@pge.com;samuelk@greenlining.org;sbccog@southbaycities.org;sbender@energy.state.ca.us;SDPatrick@SempraUtilities.com;sephra.ninow@energycenter.org;service@spurr.org;Shayna.Hirshfield@sanjoseca.gov;slda@pge.com;SRRd@pge.com;sschiller@efficiencycouncil.org;ssmyers@att.net;stephaniec@greenlining.org;sthompson@ci.irvine.ca.us;susan.munves@smgov.net;tburke@sflower.org;tconlon@geopraxis.com;wem@igc.org;yxg4@pge.com;zap@cpuc.ca.gov;ztc@cpuc.ca.gov;