

PUBLIC UTILITIES COMMISSION505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

March 17, 2005

Agenda ID #4400

TO: PARTIES OF RECORD IN RULEMAKING 01-08-028**RE:** NOTICE OF AVAILABILITY OF DRAFT DECISION RE UPDATED POLICY RULES FOR POST-2005 ENERGY EFFICIENCY AND THRESHOLD ISSUES RELATED TO EVALUATION, MEASUREMENT AND VERIFICATION OF ENERGY EFFICIENCY PROGRAMS

Consistent with Rule 2.3(c) of the Commission's Rules of Practice and Procedure, I am issuing this Notice of Availability of the above-referenced draft decision. The draft decision was issued by Administrative Law Judge (ALJ) Gottstein on March 17, 2005. An Internet link to this document was sent via e-mail to all the parties on the service list who provided an e-mail address to the Commission. An electronic copy of this document can be viewed and downloaded at the Commission's Website (www.cpuc.ca.gov).

Any recipient of this Notice of Availability who is not receiving service by electronic mail in this proceeding may request a paper copy of the this document from the Commission's Central Files Office, at (415) 703-2045; e-mail cen@cpuc.ca.gov.

When the Commission acts on the draft decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the draft decision as provided in Article 19 of the Commission's "Rules of Practice and Procedure." These rules are accessible on the Commission's website at <http://www.cpuc.ca.gov>. Pursuant to Rule 77.3 opening comments shall not exceed 15 pages. Comments may include an attachment with a tracked version of proposed changes to policy rules, terms and definitions that will not be subject to this limit.

Consistent with the service procedures in this proceeding, parties should send comments in electronic form to those appearances and the state service list that provided an electronic mail address to the Commission, including ALJ Gottstein at meg@cpuc.ca.gov. Service by U.S. mail is optional, except that hard copies should be served separately on ALJ Gottstein, and for that purpose I suggest hand delivery, overnight mail or other expeditious methods of service. In addition, if there is no

electronic address available, the electronic mail is returned to the sender, or the recipient informs the sender of an inability to open the document, the sender shall

immediately arrange for alternate service (regular U.S. mail shall be the default, unless another means – such as overnight delivery-- is mutually agreed upon). The current service list for this proceeding is available on the Commission's Web page, www.cpuc.ca.gov.

/s/ ANGELA K. MINKIN by PSW
Angela K. Minkin, Chief
Administrative Law Judge

ANG:tcg

Attachment

Decision **DRAFT DECISION OF ALJ GOTTSTEIN** (Mailed 3/17/2005)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Examine
the Commission's Future Energy
Efficiency Policies, Administration and
Programs.

Rulemaking 01-08-028
(Filed August 23, 2001)

**INTERIM OPINION:
UPDATED POLICY RULES FOR POST-2005 ENERGY EFFICIENCY
AND
THRESHOLD ISSUES RELATED TO EVALUATION, MEASUREMENT
AND VERIFICATION (EM&V) OF ENERGY EFFICIENCY PROGRAMS**

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**INTERIM OPINION:
UPDATED POLICY RULES FOR POST-2005 ENERGY EFFICIENCY
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AND VERIFICATION (EM&V) OF ENERGY EFFICIENCY PROGRAMS**

1. Introduction and Summary¹

Today's decision builds upon Decision (D.) 04-09-060 and D.05-01-055 in establishing the goals, policies and administrative framework that will guide future energy efficiency programs funded by the ratepayers of the four largest investor-owned utilities (IOUs): Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE) and Southern California Gas Company (SoCalGas).

By D.04-09-060, we established aggressive energy savings goals to reflect the critical importance of reducing energy use per capita in California. For the three electric IOUs, these goals reflect our expectation that energy efficiency efforts in their combined service territories should capture on the order of 70% of the economic potential and 90% of the maximum achievable potential for electric energy savings, based on the most recent studies of that potential. These efforts are projected to meet 55% to 59% of the IOUS incremental electric energy needs between 2004 and 2013. On the natural gas side, our adopted savings goals represent a 116% increase in expected savings over the next decade, relative to the status quo.² We established a three-year cycle for updating our savings goals,

¹ Attachment 1 describes the abbreviations and acronyms used in this decision.

² See D.04-09-060, pp. 2-3.

in concert with a three-year program planning and funding cycle for energy efficiency (“program cycle”).

Our next task was to develop an administrative structure for future energy efficiency programs designed to meet the objectives of the Energy Action Plan, including the load reductions reflected in our savings goals. To this end, in D.05-01-055 we returned the IOUs to the lead administrative role in energy efficiency program selection and portfolio management--a role that they fulfilled in California prior to electric industry restructuring.³ As part of our overall approach to quality control, we established an advisory group structure, competitive bidding minimum requirements and a ban on affiliate transactions. These safeguards were designed to ensure that the program selection process would not favor programs designed and implemented by the IOUs over those designed and implemented by third-parties. At the same time, we clarified our expectations that the focus for spending ratepayer dollars in the future would be to meet or exceed our savings goals by capturing the most cost-effective energy efficiency resources as possible over both the short- and long-term.

In addition, we established an administrative structure for evaluation, verification and measurement (EM&V) that created a clear separation between “those who do” (the Program Administrators and program implementers) and “those who evaluate” the program or portfolio performance. In particular, for program year (PY) 2006 and beyond, Energy Division will assume the management and contracting responsibilities for all EM&V studies that will be

³ Accordingly, we refer to the IOUs collectively as “Program Administrators” throughout this decision.

used to (1) measure and verify energy and peak load savings for individual programs, groups of programs and at the portfolio level, (2) generate the data for savings estimates and cost-effectiveness inputs, (3) measure and evaluate the achievements of energy efficiency programs, groups of programs and/or the portfolio in terms of the “performance basis” established under Commission-adopted EM&V protocols, and (4) evaluate whether programs or portfolio goals are met. In recognition that the Program Administrators and program implementers need access to market information to perform their responsibilities, we adopted a process that allows them to manage a limited subset of evaluation studies as long as there is no potential for conflict due to the nature of the study, and as long as Energy Division makes the final selection of contractors.

Per D.05-01-055, the Program Administrators will file their proposed PY2006-PY2008 energy efficiency program plans and applications for our consideration by June 1, 2005. Following a Commission decision on those plans, they will solicit competitive bids, make their final program selections, and submit them for our review in a second compliance filing, subject to advisory group review.

Today’s decision updates the existing Energy Efficiency Policy Manual to reflect policy rules (Rules) that articulate our objectives for energy efficiency, and that provide guidance to the Program Administrators, program implementers and interested parties for the development of program portfolios for 2006 and beyond. Among other things, the Rules describe threshold requirements for cost-effectiveness, and discuss how to calculate and present cost-effectiveness results for our consideration. They also summarize our determinations in D.05-01-055 regarding competitive bidding, advisory groups, affiliate rules and other administrative structure issues. In addition, the Rules describe our expectations

regarding the information that Program Administrators will file with their program planning applications and during program implementation. They also describe the process for updating the Energy Efficiency Policy Manual in the future, provide a guide to reference documents and include a list of common terms and definitions. (See Attachment 3.)

In addition to updating the Rules in the Energy Efficiency Policy Manual, today's decision addresses the threshold EM&V issues raised in workshops and establishes a process for developing specific EM&V protocols in the coming months. In particular, we define the metric for evaluating the performance of energy efficiency programs designed to displace or defer more costly supply-side resources ("resource programs"). We refer to this metric generically as the performance basis of a program or set of programs. For resource programs, the performance basis will be calculated on the basis of the net resource benefits (energy savings benefits minus costs) produced by the energy efficiency program(s), coupled with a minimum performance threshold tied to our adopted savings goals. This approach will encourage investments in cost-effective energy efficiency that are also designed to produce savings consistent with adopted resource planning assumptions. We prefer this approach to a performance basis that looks only at the level of kilowatt-hours (kWh), therms or kilowatt (kW) load reductions, as some parties propose. Ignoring the level of net benefits associated with program activities would, in our opinion, create a strong incentive for Program Administrators and program implementers to produce energy or demand reductions at any cost---even if the costs were higher than the supply-side alternatives these programs are designed to defer or displace.

We also clarify that the cost-effectiveness tests used to evaluate the performance basis (as well as to evaluate program proposals on a prospective

basis) should utilize non-price components of avoided costs, including environmental adders. These are real costs to all ratepayers that are avoided with the deployment of energy efficiency, and should not be ignored in the evaluation of resource benefits. For this purpose, we will use the avoided costs adopted for the evaluation of energy efficiency programs in our avoided cost rulemaking, R.04-04-025.

We reject, however, proposals by some parties to present value the future benefits of energy efficiency programs utilizing a “societal” discount rate that is, by definition, significantly lower than market rates. As discussed below, we view energy efficiency in today’s policy environment as a viable resource alternative to more expensive supply-side investments. The discount rate should facilitate comparisons among alternative investments. We therefore direct that the IOUs’ weighted cost of capital, as adopted by this Commission, be used in all cost-effectiveness calculations for energy efficiency.

In terms of evaluating the performance of Program Administrators after program implementation, we adopt the recommendation of Natural Resources Defense Council (NRDC), Office of Ratepayer Advocates (ORA) and others that any incentives or performance awards to Program Administrators should be based on portfolio performance rather than on individual program performance. A portfolio level approach will encourage innovation and allow for some risk-taking on pilot programs and/or measures in the portfolio. However, calculating the performance basis at the program level is appropriate for measuring program implementer performance.

This decision also addresses the threshold issue of what assumptions used to calculate the performance basis (e.g., program costs, number and types of

measures, first-year savings of measures and persistence of savings over time.) should be “trued up” on an *ex post* (post-installation) basis in order to evaluate the performance of the Program Administrators and program implementers after each program cycle. The parties to this proceeding agree that program costs and participation levels, including the number and type of measures or equipment installed, should be trued up based on *ex post* verification. They also agree that *ex post* measurement studies of per-unit lifecycle kWh, therm and kW savings should be used to inform and update *ex ante* (pre-installation) assumptions for future program years. They disagree, however, on whether the results of these *ex post* studies should also be used to adjust the performance basis of energy efficiency resource programs for prior years. In addition, parties disagree on how frequently these studies should be undertaken for either purpose.

As discussed below, we examine the historical relationship between *ex ante* assumptions and the results of *ex post* studies in considering the positions of the parties. We adopt an approach that strikes a reasonable balance of the following concerns: How to ensure quality control, maintain the credibility of the programs, and at the same time recognize the difficulty in tying the performance basis to true-up studies that are conducted many years after program implementation. As a general policy, we will require for PY2006 and beyond that per unit kWh, kW and therm savings be reevaluated through load impact studies to adjust the performance basis for prior program years. We will consider exceptions to this general policy for measures and/or programs for which there are well-established *ex ante* values with a high degree of confidence, and low external sources of variability that could influence energy savings. Savings persistence studies will not be tied to the performance basis, but will still be performed to inform future planning. However, we may revisit this policy and

revise it if, at a future date, there is evidence that the results of the persistence studies are significantly different from the *ex ante* estimates.

We also adopt the consensus position of the parties on how to evaluate the performance of non-resource energy efficiency programs. These include audits and targeted information programs to customers, advertising and marketing, and programs to support codes and standards. The performance basis of these and other non-resource programs will need to be further defined as we move forward with the development of specific EM&V protocols to identify measurable outputs and associated evaluation methodologies.

The next step for EM&V is to develop measurement and verification protocols consistent with today's decision, define a cycle for EM&V that is integrated into the program planning and resource planning process, and adopt specific EM&V plans for the PY2006-PY2008 programs. In today's decision we outline the goals, process and schedule for this next step. As envisioned in D.05-01-005, Energy Division and the IOUs, working with California Energy Commission (CEC) and an ad hoc technical advisory group established for this purpose ("EM&V team") will develop joint proposals for the EM&V submittals required by this decision. They will hold public workshops to obtain and incorporate feedback before finalizing the joint proposals for our consideration. We require that these submittals be filed no later than the due date for the PY2006-PY2008 program compliance filings, or October 1, 2005, whichever comes sooner.

Recognizing that it will be difficult, if not impossible, for the EM&V team to develop these filings in a budget vacuum, we establish an EM&V funding guideline of 10% of total energy efficiency program funds. We emphasize that

this 10% level is to be used as a general guideline for the EM&V planning process. Before adopting a specific EM&V funding level for PY2006-PY2008, we will need to consider the costs of proposed EM&V activities within the context of available personnel and contracting resources, the cost and expected value produced by each program, among other factors.

As discussed in this decision, the EM&V plans and associated budget for PY2005-PY2008 will reflect decisions concerning the type and frequency of EM&V studies conducted for each program and the major study parameters utilized for each study (e.g., sample design, monitoring duration and schedule, approaches undertaken to evaluate and minimize bias, etc.) In today's decision we describe the types of protocols that the EM&V team will need to develop for this purpose and include in the EM&V submittals. To further facilitate the development of these protocols and the EM&V plans for PY2006-PY2008, we provide guidance regarding the frequency and priority of EM&V activities.

We recognize that the timeline for completing the remaining EM&V filings is ambitious. However, an expedited schedule is required in order to put EM&V plans and associated protocols in place for the roll-out of PY2006-PY2008 programs. We expect Energy Division to fully utilize the expertise of the EM&V team members, including its EM&V consultant(s), to assist with the development of the filings for our consideration. We also call on all the stakeholders to work collaboratively in the months ahead. As we stated in D.05-01-055: "Working together, all stakeholders will benefit from the result of these efforts: The full

recognition of energy efficiency as a viable resource that can be relied upon to reduce the demand for energy in California.”⁴

2. Procedural History

Following the January 23, 2004 prehearing conference (PHC) in this proceeding, Assigned Commissioner Susan Kennedy directed Energy Division to conduct workshops to address EM&V-related issues. In particular, she directed that the workshops focus on defining the basis for evaluating the performance of energy efficiency “resource programs” and on adopting standardized procedures and protocols for measuring that performance basis:

“The performance basis for energy efficiency programs designed primarily to replace more costly supply-side options (resource programs) will be different than those designed for other purposes (e.g., informational programs). Over time, it will be very useful to develop standardized EM&V procedures and protocols, including standardized performance basis, for all types of energy efficiency programs and during all phases of program implementation. As discussed at the PHC, a Framework Study that proposes a comprehensive approach to EM&V will be published by the end of February and posted on the Commission’s Website. [footnote omitted.] However, I believe it is prudent to bifurcate our efforts to address EM&V-related issues by first addressing those most directly related to performance incentive design. Irrespective of the Commission’s determinations on administrative structure and incentives, we need to standardize the performance basis and measurement/verification protocols associated with resource programs for a range of other purposes, such as the ongoing assessment of energy savings potential, feedback and refinement of program design, as well as overall program evaluation.

⁴ D.05-01-055, p. 13.

“In D.03-12-062, the Commission discussed its interest in developing an incentive mechanism for the energy efficiency component of energy procurement that is consistent with overall procurement goals and incentive policies. It was within this context that the Commission referred the evaluation of energy efficiency performance incentives to this proceeding. [Footnote omitted.] The priority for workshops on Incentives and Related EM&V should therefore be on: (1) defining the performance basis of programs in terms of net resource benefits, and (2) updating existing procedures and protocols for measuring that performance basis, generally referred to as load impact evaluation.”⁵

In response to this directive, Energy Division in collaboration with CEC staff held a series of workshops on the following EM&V topics during 2004:

- Workshops #1 and #1a (April 2, 2004 and September 13, 2004): Performance basis and measurement/verification protocols associated with Resource programs.
- Workshop #2 (August 11, 2004): Integrating measurement of the performance basis into the energy efficiency program planning and implementation cycles and utility procurement planning cycles.
- Workshop #3 (September 14, 2004): Developing a performance basis for non-resource energy efficiency programs.
- Workshop #4 (November 10, 2004): Process for Developing Program Evaluation Implementation Protocols.

Attachment 2 presents the list of organizations or individuals that participated in some or all of the EM&V workshops, and a listing of those organizations that filed pre-workshop and post-workshop written comments.

⁵ Assigned Commissioner’s Ruling Establishing Schedule for Addressing High Priority Issues During 2004, and Notice of Workshop on Administrative Structure, February 6, 2004, pp. 7-8.

Energy Division and CEC staff (hereinafter referred to as “staff”) jointly prepared written summaries of consensus and non-consensus positions of the parties on the EM&V-related issues addressed in each workshop. Those workshop summaries are available on the Commission’s Website at <http://www.cpuc.ca.gov/static/industry/electric/energy+efficiency/rulemaking/eeevaluation.htm>.

At the direction of the assigned Administrative Law Judge (ALJ), the utilities submitted supplemental comparison tables of historical data on resource programs. These tables compared forecasted estimates of net resource savings (resource benefits minus costs) with the net resource savings calculated using program costs and participation rates verified after program implementation, and using per measure savings reevaluated based on the results of post-installation measurement studies.⁶ Opening comments on this supplemental information were filed on February 18, 2005, by SCE, PG&E, jointly by SGD&E and SoCalGas and jointly by the ORA, NRDC and The Utility Reform Network (TURN). Reply comments were filed on February 25, 2005 by SCE and PG&E.

Concurrent with the EM&V workshop and comment process described above, the Commission addressed administrative structure issues during 2004 through workshops, comments and oral argument. The Commission’s draft decision on administrative structure for post-2005 programs was issued for comment on November 29, 2004 and finalized on January 25, 2005.⁷ In both the

⁶ Administrative Law Judge’s Ruling Issuing Compilation of E-Table Data for Pre-1998 Energy Efficiency Programs and Requesting Further Comment, January 27, 2005.

⁷ D.05-01-055.

draft and final decision, the Commission highlighted the need to update the Energy Efficiency Policy Manual adopted in D.01-11-066 and directed the Assigned Commissioner and ALJ to establish a procedural schedule and process for updating this document “as soon as practicable.”⁸

Accordingly, the Assigned Commissioner issued a ruling on December 17, 2005 that set forth a comment schedule and workshop process for updating the rules, terms and definitions (Rules) for post-2005 energy efficiency program activities. On December 30, 2004, the assigned ALJ issued a proposed set of Rules for consideration by all interested parties. Pre-workshop comments were filed on February 1, 2005 by the American Council for an Energy-Efficient Economy, California Climate Action Registry, Center for Small Business and Environment/San Francisco Small Business Network and Small Business California (“CSBN”), NRDC, Proctor Engineering, City and County of San Francisco, County of Los Angeles, Efficiency Partnership, Women’s Energy Matters (WEM), ORA and TURN (joint filing), the IOUs (joint filing) and SCE.

The ALJ held two days of workshops on the proposed Rules on February 15 and 16, 2005, with Energy Division assistance. Over 50 organizations were represented. In addition to many of the parties listed above, workshop participants included representatives from: The San Diego Regional Energy Office, Intergy Corporation, Proctor Energy Group, Ecology Action, Staples Marketing, Univision, GeoPraxis, Yolo Energy Efficiency Project, Insulation Contractors Association, Navigant Consulting, Sacramento Municipal

⁸ *Ibid.*, Ordering Paragraph 13.

Utility District, ICF Consulting, Robert Mowris and Associates, among others. (See Attachment 2.)

In the following sections we describe the key issues raised in the workshops and written comments, briefly summarize areas of consensus and non-consensus among the parties as well as staff recommendations, where applicable, and present our determinations. Our discussion is intended to highlight the general areas of debate, rather than present a detailed accounting of each party's position on each and every issue related to the Rules or EM&V.

3. Updated Energy Efficiency Policy Manual for Post-2005 Programs

As noted in the December 17, 2005 Assigned Commissioner's Ruling, the current Energy Efficiency Policy Manual is clearly outdated. It was created in 2001 under an interim administrative structure with the Commission responsible for program selection and portfolio management. In particular, much of the current document is structured to provide guidance to IOU and non-IOU program implementers submitting proposals to Energy Division for staff review. Our recent decision on administrative structure (D.05-01-055) returns the IOUs to the program administrator role, and places quality control, advisory and primary EM&V responsibilities with our Commission staff. For energy efficiency activities beginning in 2006, the IOUs will take lead responsibility for selecting and managing a portfolio of energy efficiency programs that meet or exceed our annual and cumulative energy savings goals, with input from advisory groups and the public, and subject to our review and approval. The Energy Efficiency Policy Manual needs to be updated to reflect this new administrative structure.

More importantly, the policies and funding criteria contained in the current Energy Efficiency Policy Manual were established prior to the

development of the Energy Action Plan, which places energy efficiency back at the forefront of resource procurement activities in California. In particular, the plan establishes a loading order of energy resources that requires California to first optimize “all strategies for increasing conservation and energy efficiency to minimize increases in electricity and natural gas demand” before turning to supply-side resources.”⁹ By D.04-09-060, we translated this policy into specific, numerical goals for electricity and natural gas savings, underscoring that California’s “one high-level, overriding goal guiding its energy efficiency efforts [is] to pursue all cost-effective energy efficiency opportunities.” The Energy Efficiency Policy Manual, and the Rules contained therein, have also been updated to reflect this overriding goal in guiding program development and program evaluation.

The ALJ’s initial draft of proposed rules (Draft Rules), followed by the pre-workshop comments and workshop discussion provided valuable input into this updating process. We summarize our determinations regarding the major issues raised by parties, and present the updated Energy Efficiency Policy Manual in Attachment 3. In Sections II-XI of that document, we present the policy rules governing energy efficiency activities (Rules), commencing in 2006. For reference purposes, we also provide a marked up version of the Rules in Attachment 4 that indicate the changes made to the Draft Rules in response to written comments and the workshop discussion.

⁹ *Energy Action Plan*, 2003, p. 3. A copy of the plan is available on the Commission’s website at www.cpuc.ca.gov.

3.1. Energy Efficiency Policy Objectives and Program Funding Guidelines (Rules II.1-II.10)

This section of the Rules articulates the overriding goal of energy efficiency as the pursuit of “all cost-effective energy efficiency opportunities over both the short- and long-term.” (Rule II.2) Workshop participants expressed varying levels of concern that the pursuit of this goal could create lost opportunities in the process if the IOUs focused narrowly on exploiting the most cost-effective measures first. We have adopted language that discusses the potential for lost opportunities, but also recognizes that this potential is considerably reduced now that the IOUs are required to meet or exceed aggressive annual and cumulative savings goals. We also direct the IOUs to develop strategies to minimize lost opportunities in the design and implementation of programs, and to describe those strategies in their program plan applications. In addition, in response to workshop comments, we have broadened the definition of “lost opportunities” to recognize that they can occur if energy efficiency options that offer long-lived, cost-effective savings are not exploited in tandem with other load-reduction technologies being installed at the site (e.g., solar).

The Rules also echo our observations in D.05-01-055 that capturing the most cost effective energy efficiency resources as possible over both the short- and long-term “is the most equitable way to distribute program benefit.”¹⁰ (See Rule II.3.) To this end, we direct the IOUs to manage the portfolio of programs to meet or exceed the Commission-adopted short-term and long-term savings goals by pursuing the most cost-effective energy efficiency programs first, while minimizing lost opportunities. (Rule II.5.) Following these guidelines

¹⁰ D.05-01-055, *mimeo.*, p. 126.

will, in our view, dictate the appropriate balance for portfolio funding of resource programs among market sectors (e.g., residential, industrial and commercial). We also direct the IOUs to include in their portfolio a selection of statewide marketing and outreach programs, upstream market transformation programs, information and education programs, support for codes and standards and other activities in their proposed portfolios that support our short-term and long-term goals. In particular, IOUs are to allocate a sufficient portion of portfolio funding to statewide marketing and outreach to continue and build upon the success of the existing program. (Rule II.6.)

Several parties propose language that would add additional goals for program funding or guidelines for program design. For example, CSBN proposes that the Rules establish a priority for energy efficiency investments for underserved or hard-to-reach markets. NRDC proposes language directing the IOUs to seek a balance among programs targeted to residential and non-residential, retrofit and new construction, and statewide and local applications. NRDC also proposes language that would require the IOUs to make marketing and outreach materials available in multiple languages, to a reasonable extent, in order to ensure that programs reach language minority customers. Efficiency Partnership recommends that we establish a minimum funding level (7%) for statewide marketing and outreach activities, and require in the Rules that this funding be coordinated by and through a single statewide campaign.

We agree with the observation of one workshop participant that, “if everything is a high priority, then nothing is a high priority.”¹¹ In particular, we

¹¹ Mr. Bob Burt, Insulation Contractors Association.

believe that the appropriate mix of programs across market sectors and geography as well as appropriate program designs will reveal themselves as the IOUs focus on meeting or exceeding our short- and long-term goals pursuant to Rule II.5. Nonetheless, the Rules recognize that non-resource programs are also needed to support the savings goals, such as statewide outreach and marketing and support for codes and standards. However, rather than establishing specific funding levels or program design parameters in our Rules, we adopt general language suggested by workshop participants that recognizes the importance of such programs, and leave to the program planning process the development of specific program designs and funding proposals. (See Rule II.6.) In response to earlier written comments in this proceeding, we also include language that directs the IOUs to explore ways in which marketing and outreach activities can support the Climate Change Action Registry.¹² (Rule II.7.)

This section of the Rules also recognizes the need to increase the current level of funding for emerging technologies in the program plans for PY2006 and beyond. In the ALJ Draft Rules, the language specified a funding level based on a recent white paper on emerging technologies issued by the CEC. During the workshop process, the IOUs worked with CEC staff to develop alternative language for this section of the Rules, together with a proposal for increased funding that the IOUs will propose to the advisory groups for inclusion in the PY2006 program plans, subject to our approval. The attached Rules now reflect

¹² See Assigned Commissioner's Ruling Soliciting Comment on Ways to Incorporate the Protocols and Information Collected by the Climate Change Registry into this Proceeding, August 31, 2004, and Comments of the Climate Change Registry and other interested parties to this proceeding.

the alternate language on emerging technologies developed during the workshop process. (Rules II.8 and II.9.)

3.2. Cost-Effectiveness (Rules IV.1-IV.11)

This section of the Rules describes the cost-effectiveness tests to be used in evaluating the program portfolios, and how they are to be computed. We describe these tests in greater detail in Section 4 below, when we address the performance basis for resource programs. A prospective showing of cost-effectiveness for the entire portfolio of ratepayer-funded energy efficiency activities and programs is a threshold condition for eligibility for ratepayer funds. (Rule IV.6.)

WEM recommends that each program should also be required to pass the required tests of cost-effectiveness in order to be eligible for funding. As we discuss in Section 4 below, a portfolio level approach to evaluating cost-effectiveness and performance basis is necessary to encourage innovation and allow for some risk taking on pilot programs and/or new measures in the portfolio.¹³ Nonetheless, the Rules require that the results of the cost-effectiveness tests be considered when evaluating specific resource program proposals. (Rule IV.4.)

Workshop participants also debated the issue of what discount rate should be used to translate future year benefits and costs into current year (“present value”) terms in calculating the cost-effectiveness of energy efficiency programs.

¹³ We do, however, require that fuel-substitution programs pass the required cost-effectiveness tests on a program level, in order to ensure that such programs create resource value. See Rules IV.7 and IV.10.

NRDC proposed using a 5% nominal discount rate. NRDC argues that this relatively low discount rate is appropriate because energy efficiency investments reduce societal risk and provide cost savings and environmental benefits that remain valuable well into the future. ORA proposes the use of an 8.15% nominal discount rate, which is the standard default discount rate that has been used in energy efficiency cost-effectiveness tests for the past several years.¹⁴

For the reasons discussed in 4.2.1 below, we reject NRDC's proposal to use a lower "societal" discount rate to present value the cost and benefit streams associated with energy efficiency programs. Moreover, we note that the risk factors and environmental benefits that NRDC refers to in justifying a lower discount rate are already reflected in the avoided cost adders that we use to value the savings benefits of energy efficiency programs. Instead, since energy efficiency resource programs focus on avoiding or deferring more costly supply-side investments, we believe that the most appropriate discount rate to use is the IOUs' current weighted cost of capital.

Therefore, the Rules specify that the cost-effectiveness tests should utilize the most recent Commission-adopted values for the weighted cost of capital. Instead of using different values for each IOU, Energy Division should post a reasonable "average" of the Commission-adopted values to be utilized in discounting the costs and benefits of energy efficiency programs across all of the IOU service territories.¹⁵ Energy Division should post this average value on the

¹⁴ Energy Efficiency Manual, version 2, p. 19.

¹⁵ The current authorized cost of capital for the IOUs ranges between approximately 7.6% and 8.7%, depending upon the IOU.

Commission website with the most recent version of the Standard Practice Manual and provide the location of that posting in the references section of the Energy Efficiency Policy Manual, which will also be posted on the Commission website.

During the workshop discussion, a representative from PG&E requested clarification as to whether the costs used to calculate cost-effectiveness tests should include the IOUs' overhead and other costs associated with energy efficiency activities that are recovered through base rates. Apparently, only the IOU costs recovered through specific energy efficiency funding sources (public goods charge (PGC) or procurement rates) are currently reported for PY2004-PY2005 programs, although the IOUs have been required to report costs collected in base rates for prior program years. We affirm the ALJ's direction that *all* of the program administrators' costs related to energy efficiency programs, irrespective of their funding source, be once again included in the calculation of the Total Resource Cost (TRC) and Program Administrator Cost (PAC) tests of cost-effectiveness. To do otherwise would shield those costs from review during program planning and implementation. Without delay, Energy Division should clarify its reporting requirements to ensure that all such costs are counted, not only in compiling data on current programs per D.05-01-055 (Ordering Paragraph 5), but also in the reporting of estimated costs for future program proposals, the calculation of cost-effectiveness, and the evaluation of the performance basis after program implementation.

In addition, workshop participants discussed how best to ensure continuity of the input assumptions and calculations for the tests of cost-effectiveness presented to the Commission during the program planning process. We have included language in the Rules clarifying that the Database for Energy

Efficiency Resources (DEER) should be the source of all assumptions that are used to estimate load impacts, to the extent possible. (Rule IV.11.) Funded by ratepayers, this database has been jointly developed by the CEC and this Commission, with input and support from the IOUs and other interested stakeholders. It is designed to be the primary source for energy savings and cost-effectiveness input assumptions for program planning. We believe it is reasonable to continue to use DEER for this purpose. As discussed in Section 4 below, the EM&V protocols will include a schedule and process for updating DEER on a regular basis, for our review and approval.

In addition, we will adopt the ALJ's workshop recommendation that Energy Division or its consultants independently review the cost-effectiveness calculations presented by the IOUs in their PY2006-PY2008 program applications and compliance filings. The IOUs should work closely with Energy Division to ensure that the input assumptions and cost-effectiveness calculations required for this review are clearly presented in work papers, without delay.

3.3. Other Issues

In their pre-workshop comments, NRDC and ORA suggested adding additional sections to the Draft Rules to reflect the Commission's recent decision on energy efficiency administrative structure, D.05-10-055. These included sections on Advisory Groups, Performance-Based Risk and Reward Incentive Mechanisms, Reporting Requirements and Affiliate Rules. We have made such additions in the attached Rules.

In addition, we have made other corrections and clarifications to the Draft Rules in response to pre-workshop comments and the workshop discussion. In particular, we respond to SCE's concern that the collection and allocation of PGC

funds must comply with Pub. Util. Code §§ 381, 381.1, 399 and 890-900 by adding language from the current version of the Energy Efficiency Policy Manual that reflects these statutory requirements.¹⁶ (Rule II.10.)

We also respond to the concerns expressed by the County of Los Angeles, Proctor Engineering and others that the need for peak demand reductions is not adequately reflected in our Rules by clarifying that the savings goals established by the Commission are expressed in terms of annual and cumulative peak megawatt load reductions. (Rule II.2.) In addition, as discussed at the workshops, the avoided cost valuation of energy savings will reflect higher values when those savings occur on peak.

In its comments on the Draft Rules, ORA proposed specific “fund shifting rules” that would define how much flexibility the IOUs have to shift funds from one program to another during the three-year program cycle. We prefer to take the approach recommended by the ALJ, namely, to allow the IOUs and advisory groups to develop fund-shifting rules for our consideration over the coming weeks, and submit them for our review with the PY2006-PY2008 program plans. The Rules reflect this approach.

At the workshops, the County of Los Angeles and others recommended that the reporting requirements be carefully reviewed to ensure that the frequency of reports, amount of data and format provide information that is useful to the Program Administrators and Energy Division for their respective administrative functions, but not overly onerous to program implementers. We share this concern, not only for the program implementers but for the IOU

¹⁶ See Energy Efficiency Manual, version 2, p. 24.

program administrators as well. For example, we question the need to continue the practice of requiring monthly reports on program activities, at least at the level of detail that is currently required for 2004-2005 programs. In consultation with the Assigned Commissioner and ALJ, Energy Division should develop program-specific, portfolio-level and financial reporting requirements for PY2006 and beyond that are responsive to these concerns.

Finally, we respond to workshop comments of the Climate Change Action Registry by adding language that recognizes that energy efficiency is critical to achieving reduction in the environmental impacts, including greenhouse gas emissions, associated with the State's energy consumption. (Rule II.1.) As discussed at the workshops, we intend to closely coordinate with the Climate Change Action Registry so that the environmental adders we develop in our avoided cost proceeding will continue to be informed by the work that organization is undertaking to develop protocols for quantifying and reporting the greenhouse gas emission reductions associated with energy efficiency programs.

4. Performance Basis for Energy Efficiency Resource Programs

As discussed in the February 6, 2004 Assigned Commissioner's ruling, the first priority for the EM&V workshops was the development of a metric for evaluating the performance of energy efficiency programs designed to displace or defer more costly supply-side resources ("resource programs"). We refer to this metric generically as the "performance basis" of a program or set of programs. By way of background, it is useful to review our past and present policies for defining the performance basis of resource programs and for measuring that basis.

By D.94-10-059, the Commission established a program performance basis for pre-1998 resource programs that was based on a cost-effectiveness metric comprised of a weighted average of the Total Resource Cost (TRC) test and Utility Cost (UC) tests. Both tests produce a net present dollar value for “net resource benefits” (program benefits minus program costs), but from somewhat different perspectives. The TRC test looks at the net resource benefits of an energy efficiency measure, program or portfolio of programs from the perspective of whether or not energy efficiency is cost-effective as a resource option compared to the supply-side options it would defer or replace. Therefore, the test measures the net effect of energy efficiency based on the total costs of the program, including both the participating customer’s and the utility’s (or more generically, the program administrator’s) costs. The TRC test attempts to quantify the changes in total resource costs for the utility and ratepayers within the relevant service territories.

The costs for the TRC test are the equipment or measure costs¹⁷, including installation, operation, maintenance and administration costs, no matter who pays for them. In addition, costs for this test include the increase in supply costs for the periods in which load is increased. The benefits are the avoided supply-side costs—the reduction in transmission, distribution, generation and capacity costs valued at marginal cost. In the Societal Test variant of the TRC test, the effects of certain externalities are included, such as the benefit of avoided

¹⁷ The TRC looks at the “incremental” measure cost (not the full cost) when an energy-efficiency appliance or measure promoted through the program is installed in lieu of the standard (less efficient) appliance/measure that would have been installed, without the financial incentive or outreach program.

environmental damages, and a societal discount rate is used to calculate net present value of costs and benefits. The TRC-Societal Test attempts to quantify the change in the total resource costs to society as a whole, rather than only to the service territory (the utility and its ratepayers).¹⁸

The UC test, which has subsequently been renamed the Program Administrator Cost (PAC) test, looks at cost-effectiveness from the perspective of the administrator of energy efficiency programs. The benefits are the same as the TRC test, but costs are defined differently to include the costs incurred by the program administrator, and not the participating customer. That is, this test does not include the participating customers' out-of-pocket expenses, but does include the financial incentives paid to the customer to install the measure, along with other program costs incurred by the administrator.

For pre-1998 resource programs, the Commission weighted the TRC and UC tests to develop a metric of net benefits that could be used to evaluate program and portfolio performance. More specifically, the TRC was weighted two-thirds and the UC test was weighted one-third in calculating this performance basis. Shareholder incentive payments were based on the net benefits (total resource savings less costs) that resulted from this calculation, once a threshold level of net resource savings was achieved.

¹⁸ The most current (October 2001) version of the California Standard Practice Manual with a description of the tests of cost-effectiveness for demand-side programs and projects can be found at the following website:
<http://www.cpuc.ca.gov/static/industry/electric/energy+efficiency/rulemaking/03eproposalinfo.htm>.

Clearly defined protocols for measuring the energy efficiency program performance basis were originally adopted in D.93-05-063¹⁹ and were defined in the “Protocols and Procedures for the Verification of Costs, Benefits, and Shareholder Earnings from Demand-Side Management Programs” (Protocols). The Protocols set out a schedule for the timing of various performance basis measurement studies and defined the procedures for conducting those studies.²⁰ The Protocols were primarily based on the *ex post* measurement of program savings, that is, by measuring energy savings from a program’s energy efficiency measures or equipment through onsite metering, billing analysis, or other measurement techniques. *Ex post* in this context refers to the measurement of a program’s savings metrics (e.g., first year load impacts, effective useful life of measure(s), technical degradation of equipment over time, etc.) during or after a program’s completion.

In the current Commission Energy Efficiency Policy Manual, program hold-back and profit payments are dispersed by the Commission based on programs achieving their approved energy savings targets.²¹ Under this approach, program energy and demand savings are the current performance basis used by the Commission for evaluating resource energy efficiency

¹⁹ These Protocols were later revised in March 1998 pursuant to Decisions 94-05-062, 94-10-059, 94-12-021, 95-12-054, 96-12-079, 98-03-063, and 99-03-056.

²⁰ These Protocols are posted on the Commission’s website at http://www.cpuc.ca.gov/static/industry/electric/energy+efficiency/rulemaking/eee_valuation.htm.

²¹ The current Energy Efficiency Policy Manual can also be found at: http://www.cpuc.ca.gov/static/industry/electric/energy+efficiency/rulemaking/03e_eproposalinfo.htm.

programs. The performance basis is calculated based on the average achievement percentage of the various (kWh, kW, therms) program energy savings goals.

Program energy savings are currently measured by verifying equipment or measure installation in combination with *ex-ante* energy savings assumptions. *Ex ante* refers to assumed energy savings (also referred to as “deemed savings”) associated with a particular energy efficiency measure or equipment prior to its installation, that is, it refers to using program metric assumptions that are based on past program performance. *Ex ante* measurement relies on engineering estimates or the results of *ex post* savings measurement (e.g., load impact studies) from previous program years or other program experience.

4.1. Positions of the Parties and Staff Recommendations

The parties to this proceeding are generally split on the issue of whether to establish the performance basis of energy efficiency resource programs based on 1) energy savings/demand reductions measured by kilowatt-hours (kWhs) and (kW) versus 2) net resource benefits measured in dollars of savings (benefits minus costs) to ratepayers. SCE and other proponents of using energy savings/demand reductions as the performance basis argue that this approach aligns program performance most directly with the energy savings and demand reduction goals set by policymakers. They also contend that this approach is much simpler to implement and creates less confusion because it does not require an assessment of resource benefits (or avoided costs) or the various cost components calculated for the TRC and UC tests. In contrast, SDG&E, NRDC and others argue that the performance basis should be based on net resource benefits in order to 1) give administrators the incentive to achieve their energy

savings as cost-effectively as possible, and 2) take into account the differential value of energy savings occurring at different times and in different locations.

ORA proposes to reconcile these two approaches by calculating a metric that takes the ratios of the actual versus targeted levels for 1) TRC cost-effectiveness, 2) peak kW savings and 3) energy kWh savings, and weights them by 60%, 20% and 20%, respectively. Staff proposes to combine the two approaches by establishing energy savings/demand reduction thresholds in combination with a net resource benefits performance basis. More specifically, staff recommends using the TRC-Societal Test and UC calculations of net resource benefits (giving each equal weighting) as the performance basis for resource programs. However, program administrators could only qualify for performance incentives based on these net resource benefits once they have achieved a minimum threshold of kWh energy savings and KW demand reductions from their programs. Staff recommends that the minimum threshold of energy savings should be 15-20% below the program projected/adopted energy and demand savings for the time period.

4.2. Discussion

Before specifically addressing the issue of performance basis, it is important to reiterate that our overriding goal for energy efficiency is to place energy efficiency first in the loading order for resource procurement by investing in all cost-effective energy efficiency. As discussed in Section 3 above, this overriding goal is reflected in the Energy Action Plan and in the policies we have articulated in this proceeding and in our procurement rulemaking, R.01-10-024

and its successor R.04-04-003.²² It is within this context that we have established explicit numerical goals for electricity and natural gas savings for the IOUs. As described in D.04-09-060, the goals we adopted for 2006 and beyond represent less than the full economic potential of energy efficiency in recognition of specific barriers to capturing all cost-effective energy efficiency over the near term. Nonetheless, our expectations are clear: We are not simply pursuing the maximum level of energy savings through ratepayer investments in energy efficiency. Rather, we are looking to maximize the net resource benefits (benefits minus costs) of those investments.

4.2.1. Performance Basis Metric for Resource Programs

A performance basis for energy efficiency resource programs that is based on net resource benefits is consistent with our objectives for energy efficiency, as discussed above. In contrast, adopting a performance basis metric that ignores the level of net resource benefits produced by the programs, as SCE and Aloha Systems propose, would create a strong incentive for program administrators and implementers to produce energy savings or demand reductions at any cost—even if the costs were higher than the supply-side alternatives these programs are designed to defer or displace. Moreover, adopting a performance basis metric that does not consider the avoided costs of energy savings or demand reductions

²² See, for example, D.02-10-062 issued in R.01-10-024, *mimeo.*, p.27; D.04-01-050 in R.01-10-024, *mimeo.*, p. 9; D.04-09-060 issued in this proceeding, *mimeo.*, p. 35 and finding of fact 25.

fails to recognize that when and where those savings occur can produce very different levels of ratepayer benefits.²³

At the same time, we recognize that relying solely on net resource benefits to assess the performance of energy efficiency programs may not necessarily encourage performance that is consistent with the kWh, therm and kW savings goals we have established for energy efficiency, and in turn, with the energy and demand reductions that are incorporated into the IOUs' long term procurement plans. More specifically, energy efficiency programs could meet or exceed forecasts of net resource benefits, and thus be considered to be performing very well, while falling short of the kW and kWh levels that they were assumed (and relied upon) to contribute to resource procurement. For example, this could happen if (1) the energy savings levels used in projecting the net resource benefits of energy programs during the program planning stage were inconsistent with the Commission-adopted savings goals, (2) a program maintained the forecasted difference between costs and benefits but did so at lower absolute levels of costs and benefits than projected, or (3) a program achieved forecasted net resource benefits by focusing on higher valued energy savings at peak times (or in transmission-constrained areas), but achieved less in kWh or kW savings than the goals for that period.

²³ Aloha Systems proposes to mitigate this problem by grouping energy savings targets into time periods so that the performance basis would have an energy and demand savings threshold for each time of use period. However, this proposal does not address the problem with ignoring program costs, discussed above, or reflect other factors that can affect the value of a kWh or kW saved—such as transmission constraints.

As staff points out, the first circumstance can be avoided by requiring that the energy savings used in projecting the net resource benefits for energy efficiency programs during the program-planning phase be consistent with the Commission-adopted kW and kWh savings goals. We also agree with staff that the third circumstance, where a program achieves higher valued energy savings (e.g., by saving less overall energy but doing so at critical peak times) than anticipated, is not a negative outcome from a resource planning perspective. To address other circumstances where performance based on achieving net resource benefits could fall short of expected kW or kWh savings, we will adopt staff's proposal that a minimum threshold level for these savings be established.

We prefer this approach to ORA's proposal, which in our view is overly complicated, produces significant redundancy among the metrics included in the performance basis, and does not clearly promote performance that is consistent with the Commission's goals. In contrast, a performance basis for energy efficiency resource programs that reflects net resource benefits, coupled with a minimum threshold based on savings goals, will encourage investments in cost-effective energy efficiency designed to produce kWh and kW savings that are consistent with adopted resource planning assumptions.

However, we take issue with staff's recommended equal weighting of the two tests of cost-effectiveness included in the performance basis. We have consistently favored the TRC test for ranking and funding demand-side programs designed to avoid or defer more costly supply-side resources, for

reasons we have articulated in numerous decisions over the years.²⁴ At the same time, due to the dual-cost issue unique to demand-side resource options, we have recognized the need to incorporate the PAC test (formerly the UC test) into program funding and bid evaluation procedures to encourage the program administrator to minimize program costs as it strives to maximize resource benefits.²⁵ We believe that a heavier weighting of the TRC test more appropriately reflects our policies, and will therefore adopt a two-thirds TRC to one-third PAC weighting in calculating the performance basis of energy efficiency resource programs. We note that this is the same weighting we adopted in D.94-10-059 for the performance basis of resource programs that were implemented prior to 1998.

Today's adoption of a performance basis that weights these two tests does not, however, alter our requirement that the portfolio of energy efficiency programs should pass both the TRC and PAC tests of cost-effectiveness on a prospective basis during the program planning stage. (Rule 6.) We also recognize, as we did in D.94-10-059, that there is a possibility of a portfolio of programs producing net benefits based on the performance basis we adopt today but *not* passing the TRC test of cost-effectiveness, even though this possibility is small given the relative weightings of the two tests.²⁶ We will consider how best to ensure that ratepayers are fully protected against the possibility of paying out

²⁴ See, for example, D.92-02-075, 43 CPUC 2d, pp. 334-335; D.92-09-080, 45 CPUC 2d, pp. 574-577.

²⁵ See Attachment 6 for a description of this dual-cost issue.

²⁶ See our discussion of this issue in D.94-10-059 (57 CPUC 2d, p. 39).

performance incentives on a portfolio of energy efficiency programs that does *not* perform better than the supply-side resources it was intended to replace in a future phase of this proceeding, when we address the issue of a risk/reward incentive mechanism for energy efficiency.

We also clarify that both the TRC and PAC tests should utilize the non-price components of avoided costs (e.g., environmental adders) being developed for the evaluation of energy efficiency programs in our avoided cost rulemaking, R 04-04-025. These are real costs to all ratepayers that are avoided with the deployment of energy efficiency, and should not be ignored in the evaluation of resource benefits for either test. However, staff's recommendation that we utilize the Societal Test variation of the TRC would also treat certain cost components as transfers (e.g., tax payments and interest payments). We prefer to treat those components as explicit resource costs, as we do in evaluating supply-side options.

Moreover, the Societal Test would involve utilizing a "societal" discount rate that would be difficult to quantify—and one that is different from the discount rates we utilize to evaluate supply-side resources. We note that the 8.15% default discount rate referred to in the current version of the Energy Efficiency Policy Manual was originally established during the electric industry restructuring years, when PGC funds were used for programs designed to transform the market until we could withdraw ratepayer funding and energy efficiency funding became fully "privatized." During that short-lived transition period, we evaluated PGC-funded energy efficiency using a "public purpose test" that was essentially a renaming of the Societal variant of the TRC to better

reflect its application under the restructuring industry framework. The 8.15% rate represented a 5% real “societal” discount rate, adjusted for inflation.²⁷ However, we are viewing energy efficiency in today’s policy environment as a viable resource alternative to more expensive supply-side resources, and the TRC and PAC tests recognize this perspective by utilizing a market discount rate, rather than a lower societal discount rate.²⁸

Therefore, except by valuing non-price factors into the avoided costs, we will not incorporate the Societal variant into either the TRC or PAC component of the performance basis. As discussed in Section 3 above, we will utilize a discount rate that reflects the IOUs’ weighted cost of capital, as adopted by this Commission. We note that this approach is consistent with the manner in which we evaluated pre-1998 resource programs, and provides us with a consistent basis for present-valuing costs and benefits when comparing energy efficiency resources with the IOUs’ supply-side investment alternatives.

While we adopt in principle a minimum performance threshold for performance that is directly tied to our adopted kW and kWh savings goals, we do not specify the specific threshold levels today. In D.04-09-060, we directed that proposals for a risk/reward mechanism for energy efficiency should consider using the cumulative savings goal in a particular year as a threshold for

²⁷ See Resolution E-3592, April 1, 1999, pp. 28-29 and Attachment B, Appendix B.

²⁸ We note that the Standard Practice Manual also recognizes the difficulty in making comparisons with alternative investments when a lower societal discount rate is used for energy efficiency resources. See Standard Practice Manual (October, 2001), p. 19, footnote 4. This document is posted at: <http://www.cpuc.ca.gov/static/industry/electric/energy+efficiency/rulemaking/eee/valuation.htm>.

incentive payments, subject to a reasonable uncertainty band around the numerical levels.²⁹ By today's decision, we clarify that the performance basis *will* include such a threshold, but leave the specifics of how best to establish that level to a later phase of this proceeding, when we have an opportunity to evaluate all aspects of a risk/reward mechanism.

4.2.2. Portfolio Versus Program-Specific Evaluation

In terms of evaluating the performance of Program Administrators after program implementation, we agree with NRDC, ORA and others that the performance of the portfolio of resource programs as a whole should be the focus, and any incentives or performance awards to Program Administrators should be based on portfolio performance rather than individual program performance. This portfolio level approach is necessary to encourage innovation and allow for some risk taking on pilot programs and/or measures in the portfolio. However, as several parties suggest, calculating the performance basis at the program level is appropriate to measure program implementer performance.

4.2.3. Performance Basis True-Up

As discussed above, all parties agree that participation levels, including the number and type of measures or equipment installed, must be trued up relative to *ex ante* assumptions in evaluating program performance for a particular program year.³⁰ Parties that favor the net resource benefits approach to

²⁹ D.04-09-060, *mimeo.*, p. 36.

³⁰ However, there appears to be consensus that incremental measure costs, or "IMC" (which is a cost component in the TRC test) should *not* be trued up in calculating the

Footnote continued on next page

performance basis also agree that the program costs used in that calculation must be trueed up to actual expenditures. There is also consensus that per-unit kWh and kW savings assumptions should be evaluated on an *ex post* basis in order to inform and update *ex ante* assumptions for future program years. We are in full agreement with these principles and discuss in Section 5 the process by which they should be translated into specific EM&V protocols in the near future.

The threshold issue we need to address here, then, is whether the results of *ex post* measurement studies that evaluate per-unit lifecycle kWh, therm and kW savings should also be used to adjust the performance basis for energy efficiency resource programs for prior years. As discussed at some length in this decision, we have a history of doing both: For pre-1998 resource programs we required *ex post* reevaluation of per unit kW, kWh and therm savings assumptions for most measures spanning a 7-10 year measurement period, and the performance basis for the completed program year was adjusted based on this reevaluation. Under current EM&V protocols, we do not require that the per unit savings assumptions used to evaluate programs for funding purposes in a prior program year be adjusted on an *ex post* basis, for any program or measure.

In considering this issue, it is useful to evaluate the relative impact that *ex post* evaluation of kWh, therm and kW savings had on the calculation of performance basis for energy efficiency programs subject to our pre-1998

performance basis for a prior year. Instead, workshop participants suggest that those costs be evaluated periodically (every 3-5 years) and the results of those studies be used to update subsequent *ex ante* estimates of IMC. (See Workshop Report #1, June 8, 2004, p. 6.) Our reference to “program costs” in the context of performance basis true-ups does not include IMC.

Protocols. At the request of the assigned ALJ, utility staff compiled data from the reported E-tables in each Annual Earnings Assessment Proceeding (AEAP) for the pre-1998 program years and summarized it in the format presented in Attachment 6. As described above, the performance basis under the pre-1998 protocols (also referred to as “performance earnings basis” or “PEB”) represented a net benefits calculation based on a weighted average of the TRC and UC (currently PAC) test of cost-effectiveness. The E-Tables provide the following information in a standardized format for each program year and by utility:

- 1) *Ex ante* PEB, based on forecasts of all performance parameters for the program year in question. These are the forecasts during the program planning process when programs are selected for funding;
- 2) PEB adjusted for *ex post* verification of program costs and program participation (including types and numbers of measures installed at each location), but still using the *ex ante* forecasts of lifecycle kW and kWh savings per measure (or “per unit”) presented in (1) above;
- 3) PEB adjusted for verified costs, verified program participation *and* the results of *ex post* first-year load impact studies; and
- 4) PEB adjusted for all the performance factors in (3) plus the results of *ex post* persistence studies. The combination of the first-year load impact studies and subsequent persistence studies produce the *ex post* estimates of lifecycle kW, kWh and therm savings that are applied to the installed energy efficiency measures.

Our review of this data indicates that the largest true-up adjustments to the *ex ante* performance basis occurred in the first earnings claim, where actual program costs and verified program participation were substituted for the *ex ante* values. For example, in 1996, the *ex ante* (“target”) PEB the IOUs combined was a forecasted \$140,078,000 in net benefits. Adjustments based on verified costs and

participation (types and number of measures actually installed) increased the *ex ante* estimate by 113% to \$298,944,000 which accounted for 96% of the *ex post* net benefit value (\$311,540,000) for that program year.

The data also indicates that, for the IOUs combined, the results of the first-year load impact studies (conducted for the second earnings claim) and the persistence studies (conducted in the third or fourth year) generally cancelled each other out over time. That is, while the *ex ante* assumptions of first-year load impacts were higher than the subsequent *ex post* load impact studies revealed, the *ex ante* assumptions of expected useful life, measure retention and technical degradation were lower than the corresponding *ex post* values produced by the third or fourth year persistence studies. By 1996 and 1997, these forecasting errors nearly cancelled each other out, producing *ex post* values for kW and kWh lifecycle savings quite close to the *ex ante* assumptions used for the programs.

For example, in 1996, the first earnings claim produced a performance basis of \$298,944,000 in net benefits using *ex ante* per unit savings assumptions. The first-year load impact studies performed for the second earnings claim reduced this estimate by 9% and the third-year persistence studies raised it up again by 15%, for an *ex post* estimate of \$311,540,000 in net benefits. This represents a forecasting error of +4%, meaning that the *ex ante* estimates of kW and kWh per unit savings for that program year were 4% *lower* than the corresponding *ex post* values on an IOU-combined basis. For 1997, the first earnings claim produced a performance basis of \$258,981,000 using *ex ante* per unit savings assumptions. The first-year load impact study performed for the second earnings claim reduced that estimate by 19%, and the third-year persistence study raised it up again by 14%, for an *ex post* value of \$240,081,000 in net benefits. This represents a forecasting error on the order of -6.4%, meaning

that the *ex ante* estimates of kW and kWh per unit savings for that program year were 6.4% *higher* than the *ex post* values produced by subsequent studies.

In sum, the available data indicates that, for the IOUs combined, the *ex post* reevaluation of lifecycle kW and kWh savings conducted for the pre-1998 programs did not produce significant adjustments to *ex ante* forecasts of net resource benefits once the actual program costs and program participation had been verified. This is not to imply that reliance on *ex ante* kW and kWh savings assumption is without some inaccuracies. Had the Commission relied on this approach (while truing up cost and participation parameters) for the 1994-1996 program years, we would have *underestimated* program net benefits and associated earnings for the IOUs combined, and slightly *overestimated* the net benefits and earnings for program year 1997.³¹ However, based on the available data, these inaccuracies do appear to work in both directions--without resulting in systematic overestimation of net benefits, on a statewide basis.³²

One can see this by comparing the PEB for the first-earnings claim relative to the PEB calculated after the load impact and persistence studies were

³¹ The utility-specific numbers in Attachment 6 reveal that most of the underestimation was attributed to PG&E's *ex ante* assumptions of kW and kWh savings (relative to the results of subsequent *ex post* studies) which—given the relative size of PG&E's programs--more than offset the overestimations of kW and kWh savings estimates associated with SoCalGas and SCE's *ex ante* assumptions.

³² The IOU-specific tables in Attachment 6 do reveal some anomalies in this regard for SoCalGas and SCE that may reflect the lack of adequate "feedback" between *ex post* results and subsequent *ex ante* program planning estimates during the pre-1998 years. As discussed in this decision, this feedback process is key, and documentation of how *ex post* study results are incorporated into subsequent program planning (and resource planning assumptions) will be part of our EM&V protocols.

performed in the third or fourth year after program implementation. As indicated in the Attachment, the net benefits for program year 1994 calculated after adjusting cost and participation parameters (first earnings claims) are \$497,017,000. After further adjusting net benefits based on load impact and persistence studies, the net benefits for that year is \$600,602,000. Hence, the net benefits calculated with *ex ante* per unit kW, kWh and therm savings estimates captured only 83% of *ex post* net benefits associated with 1994 programs, for the IOUs combined. For program years 1995 and 1996 this percentage was 87% and 96%, respectively, also representing an underestimation of savings for those years. In 1997, this percentage was 108%, indicating that the *ex ante* estimates of kW and kWh savings used in that year slightly overestimated savings for that one program year.

Based on this and other information discussed at workshops and in written comments, SCE, PG&E, SDG&E and Aloha Systems argue that EM&V efforts to assess program performance for a particular funding cycle should focus only on verifying program costs and participation, including the number, type and quality of measure or equipment installation. In their view, *ex post* studies should not be used to reevaluate the per unit kW, kWh and therm savings levels in calculating the performance basis of any program.

In particular, PG&E contends that using *ex post* studies of per unit savings to inform future planning efforts, and not to reassess prior program year performance, will “reduce potential controversy over measurement results after evaluation has been completed, and instead focus parties’ attention on robust

measurement and evaluation techniques upfront.”³³ Others argue that *ex post* measurement of kWh and kW savings will stifle innovation. They contend that program developers are more likely to design programs using established measures, and to avoid introducing innovative measures or entering markets where savings are less certain, when they know that per unit savings estimates will be reevaluated and adjusted after-the-fact.

We find some merit to these arguments. However, we are also persuaded by the joint comments of ORA, TURN and NRDC (“Joint Parties”) that the results observed during the 1994-1997 period may have been due to the policy environment during that time. More specifically, the close alignment of *ex post* and *ex ante* numbers may have been influenced by the fact that during these years, the utilities and implementers knew they would be evaluated based on *ex post* performance, and therefore had the proper incentive to ensure quality control. As these parties point out, looking forward, it is difficult to predict whether the same alignment between *ex post* and *ex ante* values would occur if the performance basis was decoupled from *ex post* evaluation of per unit saving data. Moreover, on an ongoing basis, our adopted savings targets are likely to require administrators and implementers to employ relatively new energy-savings measures and services for which solid *ex ante* information and data is not readily available or transferable.

In our view, Joint Parties present a proposal that strikes a reasonable balance of the concerns raised during the workshops and in comments, namely, how to ensure quality control, maintain the credibility of the programs, and at

³³ Comments of PG&E, July 2, 2004, p. 7.

the same time recognize the difficulty in tying the performance basis to true-up studies that are conducted many years after program implementation. They propose the following:

1. As a general policy, *ex post* reevaluation of per unit kWh, kW and therm savings through load impact studies should be required to adjust the performance basis for prior program years.
2. An exception to the general policy may be appropriate for measures and/or programs for which there are well-established *ex ante* values with a high degree of confidence, and low external sources of variability that could influence the energy savings.
3. Persistence studies should still be performed to inform future planning, but should not be tied to the performance basis.

We agree with Joint Parties that a general policy of adjusting the performance basis based on the results of load impact studies is necessary to ensure quality control and to maintain the credibility of the energy efficiency programs. As they point out:

“Even with the success of energy efficiency programs in the past, some will question whether energy efficiency is a reliable resource that provides the claimed energy savings; tying compensation to *ex post* evaluations provides hard after-the-fact evidence of the savings achieved, holds the administrators accountable for the results, and will maintain the credibility of the programs. Relying on load impact studies for the performance basis also helps to ensure accurate forecasting. If an existing *ex ante* [Database for Energy Efficiency Resources] DEER value is known to be too high, the administrators should use the value they expect to be more accurate, since they know they will be compensated based on *ex post* evaluation, until the DEER value is corrected. This is essential since the resource planners will be

relying on these savings as a resource and the forecasts should be based on the best available information.”³⁴

Moreover, the need to link *ex post* savings to the performance basis also arises from the fact that actual energy savings are influenced by a variety of factors over which administrators and implementers have control, including the quality of installation, proper application of a measure, proper operation, among others. Such factors may cause near-term performance to differ from assumed values obtained from the DEER. As Joint Parties explain:

“For example, EM&V findings in California and other states indicate that *ex ante* and *ex post* energy savings can differ significantly for some measures depending on the quality of the implementation. For instance, the proper sizing and installation of heating, ventilation and air conditioning equipment, and duct testing, sealing and insulation, can significantly affect the energy savings achieved. In all of these cases, tying compensation to the verified savings will better align the administrators’ and implementers’ incentives with the Commission’s goals.”³⁵

At the same time, as Joint Parties recognize, it may not be necessary to “true up” the performance basis using *ex post* load impact studies for some measures and/or programs. In particular, our EM&V protocols should allow for exemptions from this requirement for those measures that have 1) *ex ante* per unit savings assumptions that are already estimated with a high degree of certainty

³⁴ Comments of ORA, NRDC and TURN on the Administrative Law Judge’s Ruling Issuing Compilation of E-Table Data for Pre-1998 Energy Efficiency Programs, February 18, 2005, p. 3.

³⁵ *Id.* Joint Parties also make specific recommendations regarding the *ex post* protocols applicable to Standard Performance Contract and New Construction programs. (pp. 3-4.) We believe that this level of detail is better left to further discussion during the protocol development process, and do not address them in today’s decision.

and updated on a regular basis and 2) low external variability (e.g., in quality of installation, or operational characteristics. Referred to as “plug and play” (e.g., residential refrigerators and clothes washers), these measures can be expected to perform as estimated once installed, and therefore, it is not necessary to tie compensation to *ex post* load impact evaluations. Nonetheless, it will still be necessary to update the *ex ante* assumptions for these types of measures, on an appropriate schedule. We believe that the EM&V protocol development process described in Section 5 below is the appropriate forum for examining the specific types of measures or program types where *ex ante* assumptions will suffice.

Once the near-term load impacts of a measure or program has been evaluated, the durability of those impacts over time is important to enable resource planners to rely on energy efficiency as a resource. We have utilized persistence studies in the past to demonstrate the durability of those savings. As discussed above, during the 1994-1997 period the performance basis was tied to persistence studies over a 7-10 year measurement period. As Joint Parties point out, the completed studies have shown that the *ex ante* estimates of persistence were generally reliable. Based on that experience, we agree with Joint Parties’ assessment: The additional incentive obtained by tying the performance basis to the persistence studies over time does not merit the lengthy and difficult administrative process necessary to create that incentive. Moreover, this approach will simplify our oversight process and shorten the timeline for administrator and implementer compensation.

Persistence studies should continue to be conducted, however, to inform updates to *ex ante* assumptions and to feed into future program planning and resource planning assumptions. We will revisit this policy and revise it at a future date, as appropriate, if there is evidence that the results of *ex post*

persistence studies are significantly different from the *ex ante* estimates. In that case, we will reassess the need to tie the performance basis to persistence studies for future programs.

Clearly, all of the *ex ante* assumptions used to evaluate proposed programs during each program cycle will need to be carefully scrutinized by the IOU program administrators, the Program Advisory Committees and Peer Review Groups and this Commission to ensure that they are reflective of the best available information, including completed measurement studies. One of the most important next steps in the development of our future EM&V protocols will be to develop a systematic process for collecting and reporting that information, including regular updates to the DEER database, for use during the program evaluation process. We discuss this important step further in Section 5 below.

Finally, with regard to concerns that requiring any true-up of kWh, therm or kW savings in calculating the performance basis will stifle innovative program designs or measures, we believe that there are other ways to encourage innovation in program design without eliminating such an important component of quality control. We have taken these concerns carefully into consideration in developing the Rules and approach to EM&V that we adopt today. For example, the threshold cost-effectiveness criteria for evaluating the IOUs' portfolios will be applied on a *portfolio* level, not on the individual program level. (See Rule IV.6.) Similarly, the performance basis for resource programs will be calculated on a portfolio-level basis. This provides the IOUs with needed flexibility to consider new designs and technologies (whose savings may be less certain) along with standard programs in assembling a portfolio that will achieve or exceed the Commission's savings goals. We have also adopted policy rules to address

emerging technologies, in order to encourage innovation from promising new technologies over the longer-term. (Rules II.8 and II.9.)

In addition, our adopted administrative structure for energy efficiency encourages program innovation through the input of advisory groups and the competitive bid requirement established in D.05-01-055. These approaches to encouraging innovation are much more appropriate than entirely eliminating *ex post* true-ups of kWh, kW or therm savings, as some parties propose. On balance, we believe that our adopted rules and approach to EM&V is the best way to maintain quality control and credibility of program results, while encouraging innovation in program design and delivery.

4.2.4. Treatment of Commitments

This issue relates to whether savings and resource benefits counted towards the performance basis should reflect one of the following two methodologies: a) installations in a given year, regardless of the year in which any given installation was funded, or b) installations and funding commitments related only to the current year's funding. Prior to 1998, the performance basis was calculated utilizing method a) above, with energy savings and resource benefits calculated as they occurred. Since 1998, the performance basis has been calculated utilizing method b) above, matching the annual budgets with annual energy savings estimated at the end of the program year. Those estimates have included a combination of the savings from the measures installed during the program year and estimated savings from funds committed to projects not yet installed.

In establishing the energy savings goals per D.04-09-060, we clarified that:

“[O]nly actual installations should be counted towards these goals, and not commitments. This means, for example, that the

savings reported for PY2006 will reflect measures actually installed during calendar year 2006 (January through December), regardless of whether the commitments to install those measures were made in PY2006 or in prior program year(s). This will require some changes to current reporting requirements, so that while commitments are still tracked for each program year, only the actual installations are counted toward our adopted goals.”³⁶

Approach a) above is consistent with the manner in which we will be measuring achievement of our savings goals. Moreover, it avoids the need for an additional true-up process (between commitments and actual installations), thereby allowing for a more timely calculation of the performance basis for a given program cycle. For these reasons, we will require that the savings and resource benefits associated with installations completed in a given year, regardless of the year in which any given installation was funded, will be counted towards the performance basis for that program cycle. Nonetheless, as indicated above, we will require the IOUs to report and track both installations and commitments for each program year. This information will be useful for resource planning purposes and enable us to link program activities with a particular funding cycle, as needed.

5. Performance Basis for Non-Resource Energy Efficiency Programs

Workshop #3 focused specifically on the issue of performance basis for energy efficiency programs that do not directly procure energy resources, i.e., “non-resource” program. More specifically, these programs work towards the goal of increasing the efficiency of energy use through energy information, education and outreach and other approaches that do not directly involve the

³⁶ D.04-09-060, *mimeo.*, p. 33.

installation of energy efficient equipment or measures at customer premises. As discussed at the workshop and in written comments, the performance basis must reflect the goal(s) of the particular information, marketing or outreach program. Workshop participants and Energy Division reached consensus on how to measure the performance basis for these types of programs, as follows:³⁷

- Audits and Targeted Information Programs to Customers: The performance basis should measure net benefits based on program participants being: a) moved to take action through a resource program; b) taking an action themselves based on the audit/targeted education program, c) doing both of the above.
- Codes and Standards Advocacy and Industry Standards Programs: The performance basis should be based on a) predicted savings in case study analyses or American Society for Testing and Materials (ASTM) standards (for programs developing standards) that are presented to decision makers, and b) by how much of the recommended case study/ASTM savings are implemented in the adopted code or standard.
- Education/Training Programs: For schools, universities and other training programs, the performance basis should be based on: a) attitude, awareness and knowledge of students; b) reasonable impacts on energy savings or intention to act based on students' actions.
- Advertising and Marketing: The performance basis should be based on: a) any direct energy savings impacts attributable to the activity; b) the intention to act, if no direct impacts are possible to measure; and c) the reach of the advertising/marketing activity, the frequency of the activity and the leveraging of ancillary resources that comes from the activity.

³⁷ *Workshop Report on Future Commission Policies on Energy Efficiency Evaluation, Measurement and Verification*, November 2, 2004, pp. 4-5.

In addition, workshop participants agreed that a separate performance basis for telephone centers and websites should not be developed. Rather, these program activities should be considered as part of the administrative costs of the programs they support. They also reached consensus that the term “market transformation” should be dropped for the purpose of establishing performance basis, since the activities and program efforts that have been included under this term are more currently covered under resource programs and other program categories.

We adopt these consensus positions, with the expectation that Energy Division with input from other members of the EM&V team (see below) will further develop each performance basis to more specifically identify outputs to be measured and evaluation methodologies.

6. Developing Specific EM&V Protocols and Integrated EM&V Cycle

Today’s decision clarifies how we plan to evaluate the performance of both resource and non-resource energy efficiency programs in terms of defining the performance basis. For resource programs, we have also clarified which performance parameters will be trued-up based on *ex post* verification efforts in order to calculate the performance basis of programs implemented during the program cycle. On a prospective basis, most if not all performance parameters will be reevaluated *ex post* to inform future program development and resource planning activities. For this purpose, we need to develop specific EM&V protocols and a cycle for EM&V that is integrated into the program planning and

resource planning process. We agree with workshop participants that this goal of this effort is to:³⁸

- Produce a standardized process for evaluating programs, reporting results and acting on results;
- Provide credible and objective information on program impacts and performance;
- Produce recommendations to improve program performance;
- Produce an accurate assessment of future opportunities to save energy; and
- Produce results that meet the needs of the Independent System Operator (ISO) and resource planners in order for energy efficiency to be a viable resource

In addition, our EM&V efforts should be structured so that they can:

1) inform the program selection process, 2) provide early feedback to program implementers, 3) produce calculations of performance basis at the end of the funding period, and 4) feed back into the planning process for the next program cycle. Workshop participants agree that we need to establish such an integrated process, including a timeline for required EM&V studies and verification activities, but could not reach consensus on the specifics.

Now that we have clarified key threshold issues on EM&V for post-2005 programs, we believe that interested parties will be in a much better position to provide input on this issue. As we stated in D.05-01-055, we envision a process whereby Energy Division and the IOUs, working with CEC and an ad hoc technical advisory group established for this purpose, develop a joint proposal

³⁸ Report on Workshop #4: The EM&V Protocol Development Process, January 21, 2005, p. 5.

for EM&V plans for the PY2006-PY2008 program cycle.³⁹ We expand the scope of this task for the upcoming program cycle to include the development of EM&V protocols for both resource and non-resource programs and an integrated EM&V cycle consistent with today's direction. We refer to the group of EM&V technical experts who will be developing the EM&V submittals (i.e., EM&V staff from the IOUs, Energy Division and its EM&V consultants, CEC and members of the ad hoc technical advisory group) as the "EM&V team" throughout this decision.

As directed in D.05-01-055, the EM&V team should discuss their EM&V submittals in public workshops to obtain and incorporate feedback before finalizing them for our consideration. Interested parties will have a further opportunity to comment on the EM&V plan and related EM&V documents once they are filed at the Commission.⁴⁰ Although we originally anticipated that the EM&V plans for PY2006-PY2008 would be submitted by June 1, 2005 with the proposed program plans,⁴¹ we believe that additional time will be needed to allow for the development of EM&V protocols and other EM&V-related filings for our consideration.

In particular, we now expect all the EM&V-related filings for PY2006-PY2008 to be submitted no later than the due date for the program compliance filings required under Ordering Paragraph 9 of D.05-01-055, or by October 1,

³⁹ See D.05-01-055, p. 113. As discussed in that decision, Energy Division may also hire an independent consultant or consultants to assist in this and other EM&V-related responsibilities. See Ordering Paragraph 146.

⁴⁰ *Ibid.*, p. 113.

⁴¹ *Ibid.*, Ordering Paragraph 6.

2005, whichever comes sooner. These submittals should still be filed in the program planning application docket(s), but the EM&V team may pace the schedule for filing specific components over a longer period of time. For example, the EM&V protocols and EM&V plans for resource programs may be submitted earlier than those for non-resource programs. As appropriate, Energy Division and the CEC should update the EM&V roadmap required by D.05-01-055 (Ordering Paragraph 14) to reflect today's decision regarding schedule and content of the EM&V filings. The assigned ALJ may provide additional clarification and direction on EM&V issues, or make modifications to the roadmap during the program planning cycle, as needed.

We recognize that it is difficult, if not impossible, for the EM&V team to develop EM&V plans for the PY2006-PY2008 program offerings in a budget "vacuum." It is clear from the comments that we need to provide more guidance regarding the level of funding available and appropriate for EM&V-related activities, in order to facilitate meaningful debate over EM&V plans and protocols. According to the Framework Study, estimates of where evaluation budgets should be set have generally ranged from about ten percent to a low of about two percent of the program budget. For California IOUs, EM&V expenditures have ranged from a high of approximately 14% over the 1993-1996 time period to an average of approximately 4% in recent years.⁴²

Looking forward, we are doubtful that the lower range of these estimates would provide sufficient resources for EM&V-related activities. In particular, we

⁴² Source: Data compiled from the Annual Energy Efficiency Reports of the IOUs filed with the Commission each May.

note that program evaluations during recent years have relied on “deemed” savings estimates (*ex ante* estimated per unit savings) or adjustments to deemed savings, a practice that requires less EM&V expenditures than those requiring true-ups based on *ex post* load impact studies. Moreover, the Framework Study reports that many program administrators have indicated that they lacked sufficient resources to conduct process evaluations or to obtain baseline information for their programs.⁴³ Finally, the Framework Study discussion of how to establish evaluation budgets does not consider the broader range of EM&V activities that will be needed to meet our EM&V goals, such as the updating of savings potential studies and the development of information to hand off to resource planners in California.

Based on the above considerations, we believe that an EM&V budget of approximately 10% of program funding is a reasonable guideline for the EM&V team to use in developing EM&V plans for the upcoming program cycle. This level of funding would cover the range of EM&V-related activities required to meet our EM&V goals, including the costs of verifying program participation and program expenditures, conducting load impact studies, persistence studies and process evaluations and updating the energy savings potential studies per D.04-09-060, among others. We emphasize that the 10% level is to be used as a general guideline for the EM&V planning process. Before adopting a specific EM&V funding level for PY2006-PY2008, we will need to consider the costs of proposed EM&V activities within the context of available personnel and

⁴³ Framework Study, pp. 70-71.

contracting resources, the cost of each program as well as the expected value produced by each program, among other considerations.

The EM&V plans and associated budget for the portfolio of programs offered in PY2006-PY2008 will reflect decisions concerning the type and frequency of EM&V studies conducted for each program and the major study parameters utilized for each study (e.g., sample design, monitoring duration and schedule, approaches undertaken to evaluate and minimize bias, etc.). As part of the planning process for this and future program cycles, the EM&V team will need to develop EM&V protocols that include the following information:

- a) A protocol table for classifying each proposed program, based on characteristics such as program size, market segment, whether it involves new construction or retrofit applications, the performance basis and other considerations, in order to establish the type of studies that will be conducted under the EM&V plan. The pre-1998 EM&V protocols and the Framework Study offer guidance that can be used to decide what type of evaluations to pursue based on the classification of programs.⁴⁴ For example, for a program offering appliance rebates, the protocol table might indicate that gross load impacts would be assessed using engineering methods, net-to-gross impacts would be survey-based, and measurement retention and technical degradation assessments would be based on sub-sample site visits for program participants and non-participants.
- b) A cross-walk table between the type of study or studies required for each program classification and the specific outputs that will be generated for the calculation of the performance basis—either on a prospective basis for future programs or for true-up purposes for prior year programs. For example, the outputs of an

⁴⁴ See for example, Table C.4 in Appendix C of the Framework Study, and Tables 9 and 10 and the C-Tables in Appendix C of the pre-1998 protocols.

- engineering analysis to evaluate gross load impacts would include the load shape and level of savings per unit. The outputs of a participation verification study would include the types and numbers of measures and equipment installed.
- c) A protocol that describes the frequency for each type of study, by program classification. The combination of this protocol and b) above should provide a schedule for how frequently specific performance parameters (e.g., first year energy savings, program participation, expected useful measure lives, net-to-gross ratios, technical degradation factors, etc.) will be updated. As indicated in Section 4 above, some of these parameters will need to be updated to true-up the performance basis as well as to inform future *ex ante* estimates. We provide further guidance below concerning the frequency of studies for the development of this protocol.
 - d) Quality control protocols that provide directions on how to gather and analyze information for major study parameters, including acceptable methods for estimating load impacts, sample design and billing data requirements (as applicable), acceptable data collection methods, acceptable confidence levels, approaches for dealing with uncertainty, recommended techniques for assessing and minimizing potential bias, among others. In the pre-1998 protocols, these types of directions appeared in the specific protocol tables associated with each study type (e.g., Impact Measurement C-Tables). The Framework Study provides a more expansive discussion of the major study parameters, in both text and tabular (or flow chart) form.⁴⁵ The EM&V team should review the pre-1998 protocols and the Framework Study and create from applicable sections of either or both a set of quality control guidelines to be used in conducting the various types of EM&V studies (e.g., impact, persistence and process) included in the EM&V plans.

⁴⁵ See, for example, the Sampling Roadmap section of Chapter 13, beginning at page 332 and "Steps in Developing the Sample Design" within that section of the Framework Study.

- e) A schematic and accompanying description that illustrates the “integrated EM&V cycle”, that is, how the required studies will inform the program planning and resource planning process. This document should indicate when studies will be completed, how they will be submitted/made available for public review, and describe how the resulting updated information will feed into the next energy efficiency program planning cycle and/or resource planning cycles. In particular, it should present the schedule and process for updating the DEER database on a regular basis, using the results of *ex post* measurement studies.

Because the energy savings from the Low Income Energy Efficiency (LIEE) programs will also be counted towards the Commission-adopted savings goals, per D.04-09-060, we will need to more closely coordinate the EM&V protocols associated with LIEE programs (e.g., load impact studies) with those developed in this proceeding. The IOUs will be conducting LIEE load impact studies for programs implemented during PY2005.⁴⁶ In the coming months, the EM&V team should carefully coordinate the study parameters for this effort with those being developed for non-low income energy efficiency programs in this proceeding. After receiving public input, the EM&V team should also develop an updated performance basis and associated EM&V protocols for post-2005 LIEE programs. These protocols (e.g., frequency of load impact studies, quality control protocols for study parameters, verification methods for customer participation, etc.) should be developed to be as consistent as possible with those being developed in this proceeding. However, we will defer our consideration of these LIEE-related EM&V issues until the 2006 Annual Earnings Assessment Proceeding (AEAP). With the May 1, 2006 AEAP filings, the EM&V team should jointly

⁴⁶ **Reference** Executive Director’s letter approving request for extension.

present a proposal for the LIEE performance basis and associated EM&V protocols for our consideration.

To further facilitate the development of EM&V plans for PY2006-PY2008 energy efficiency programs, including the development of EM&V protocols and an integrated EM&V cycle, we provide guidance regarding the frequency and priority of various EM&V activities in the following discussion. Overall, we agree with SCE's observation that "the measurement and evaluation efforts should be scheduled as often as necessary, but not necessarily timed consistently among all programs or attributes."⁴⁷

For program costs and the number, types and quality of measures installed, we suggest that these performance parameters be verified on a fixed schedule immediately after the program year is over. The EM&V plans submitted for PY2006-PY2008 will need to specify the method for verification of these parameters (and associated costs) for our consideration. As discussed above, program costs and program participation have in the past accounted for the major true-up adjustments to *ex ante* projections of net resource benefits. We therefore expect the EM&V plans to allocate a level of funding and effort to the verification of these performance parameters that reflects their importance.

With regard to *ex post* first-year load impact studies to measure the peak (kW) and energy (kWh and therm) savings associated with resource programs, we suggest that they be conducted at least once during each three-year program funding cycle. As discussed above, regular *ex post* measurement of load impacts will be needed to update savings forecasts on a prospective basis and, as a

⁴⁷ Pre-Workshop Comments of SCE for Workshop #2, August 3, 2004, p.6.

general policy, to true-up the performance basis of resource programs. Exceptions to this minimum frequency requirement may be appropriate for measures and/or programs for which there are well-established *ex ante* values with a high degree of confidence, and low external sources of variability that could influence the energy savings.

We also suggest that persistence studies be conducted at least once every 3-5 years for the top ten measures ranked by net resource value, or the number of measures that constitutes the first 50% of the estimated portfolio resource value, whichever number of measures is less. Tables 8 and 9 of the pre-1998 protocols may provide the EM&V team with additional guidance on the issue of what measures should be included in persistence studies, and their frequency. Consistent with the workshop consensus, incremental measure costs should be evaluated and updated on the order of once every 3-5 years.

We also suggest that all programs (resource and non-resource) be subject to some form of *ex post* evaluation--either load impact evaluation or process evaluation--at least once every two years. Programs with new measures should include both process and impact evaluation within two years of their initiation. In addition, the underlying program theory for new or substantially revised programs should be reviewed during their first year or as part of their process evaluation.

The EM&V plans should also ensure that resource planners and the ISO receive a complete and accurate assessment of the estimated portfolio-level savings impacts at least once every three years. This will require an evaluation of the potential interactions among savings from programs in the same sector or market, i.e., the sum of the parts may not equal the whole.

In addition, the EM&V plans should include a schedule and budget for updating studies to estimate the remaining potential to save energy, including the impact of recently adopted building and appliance standards, and to evaluate how these estimates relate to current energy savings goals. This analysis should be completed by June 1, 2007 to ensure that the Commission has sufficient time to readjust savings goals for the 2009-2011 programs.

Finally, separate and distinct evaluation plans should be developed for emerging technology programs. Energy Division and the CEC should work with emerging technology program managers to identify key metrics of success for the programs proposed with the June 1, 2005 program plan applications, and then develop an evaluation plan that will provide the Commission with information on their progress, on an annual basis.

We recognize that the schedule for developing and submitting all of these EM&V filings is ambitious. However, an expedited schedule is necessary in order to have EM&V plans and associated protocols in place for the roll-out of PY2006-PY2008 programs. We expect Energy Division to fully utilize the expertise of the EM&V team members, including its EM&V consultant(s), to assist with the development of these proposals for our consideration. We also call on all the stakeholders to work collaboratively in the months ahead. As we stated in D.05-01-055: “Working together, all stakeholders will benefit from the result of these efforts: The full recognition of energy efficiency as a viable resource that can be relied upon to reduce the demand for energy in California.”⁴⁸

⁴⁸ D.05-01-055, p. 13.

7. Comments on Draft Decision

The draft decision of ALJ Gottstein in this matter was mailed to the parties in accordance with Pub. Util. Code § 311(g)(1) and Rule 77.7 of the Commission's Rules of Practice and Procedure. Comments were filed on _____. Reply comments were filed on _____.

8. Assignment of Proceeding

Susan P. Kennedy is the Assigned Commissioner and Meg Gottstein is the assigned ALJ in this phase of the proceeding.

Findings of Fact

1. The current Energy Efficiency Policy Manual needs to be updated to reflect the administrative structure adopted in D.05-01-055 and the energy efficiency goals articulated in the Energy Action Plan and in recent Commission decisions.

2. The policy rules contained in the Energy Efficiency Policy Manual (Rules) need to reflect the Commission's overriding goal for energy efficiency, namely, to pursue all cost-effective energy efficiency opportunities over both the short- and long-term. They also recognize that energy efficiency is critical to achieving reductions in environmental impacts, including greenhouse gas emissions, associated with the State's energy consumption.

3. The D.04-09-060 requirement that the IOUs meet or exceed our adopted savings goals, which represent aggressive "stretch goals" over the short- and long-term, reduces the potential for creating lost energy efficiency opportunities.

4. Focusing energy efficiency activities on programs that serve as alternatives to more costly supply-side resource options ("resource programs") is the most equitable way to distribute program benefits. By keeping energy resource procurement costs as low as possible through the deployment of cost-effective

resource programs, over time all customers will share in the resource savings from energy efficiency.

5. Adding language to the Rules that would specify target market sectors to reach with program efforts, create minimum funding level requirements for specific programs or define program outreach methods would dilute efforts to attain the overriding goal for energy efficiency and unduly handicap the program planning process established in D.05-01-055. The appropriate mix of programs across market sectors and geography, as well as appropriate program design, will reveal itself during the program planning process and during program implementation as the IOUs focus on pursuing the most cost-effective programs that will meet or exceed the Commission's short- and long-term savings goals, while minimizing lost opportunities in the process.

6. The Rules recognize that non-resource programs are also needed to support the savings goals, such as statewide outreach and marketing and support for codes and standards. To continue and build upon the success of the existing statewide marketing and outreach program, the IOUs should allocate a sufficient portion of portfolio funding to this effort.

7. The Rules recognize that encouraging the accurate reporting of emissions in California will support the Governor's and State's goals to reduce greenhouse gas emissions. To this end, the IOUs should explore with their advisory groups ways in which to co-brand with the California Climate Action Registry. This might include marketing and outreach efforts that provide information about the Registry to IOU customers and encourage larger commercial and industrial customers to participate in the Registry reporting protocols, for example.

8. A portfolio level approach to evaluating cost-effectiveness and performance basis is necessary to encourage innovation and allow for some risk

taking on pilot programs and/or new measures in the portfolio. However, the results of cost-effectiveness tests should be considered when evaluating specific resource program proposals.

9. Considering the results of both the TRC and PAC tests of cost-effectiveness (“dual test”) when evaluating program proposals ensures that program administrators and program implementers do not spend more on financial incentives or rebates to participating customers than is necessary to achieve TRC benefits.

10. All of the program administrators’ costs related to energy efficiency programs, irrespective of their funding source (e.g., via base rates), should be included in the calculation of the TRC and PAC tests of cost-effectiveness on a prospective basis, in the reporting of estimated costs and cost-effectiveness for future program proposals and in evaluating the performance basis of programs after implementation. To do otherwise would inappropriately shield those costs from review during program planning and implementation.

11. It is reasonable to continue to use DEER as the primary source for energy savings and cost-effectiveness input assumptions for program planning, subject to an updating process and schedule that will be developed in the EM&V protocols.

12. A performance basis for energy efficiency resource programs that is based on net resource benefits is consistent with the expectation that ratepayer investments in energy efficiency should seek to maximize net resource benefits (resource savings minus costs). In contrast, adopting a performance basis metric based on kWh, therm or kW savings levels ignores the level of net benefits produced by the programs. This approach creates a strong incentive for program administrators and implementers to produce energy savings or demand

reductions at any cost—even if the costs were higher than the supply-side alternatives these programs are designed to defer or displace. Moreover, adopting a performance basis that does not consider the avoided costs of energy savings or demand reductions fails to recognize that when and where those savings occur can produce very different levels of ratepayer benefits.

13. As discussed in this decision, relying solely on net resource benefits to assess the performance basis of resource programs may not necessarily encourage performance that is consistent with the kWh, therm and kW savings goals we have established for energy efficiency, and in turn, with the demand reductions that are incorporated into the IOUs' long-term procurement plans.

14. ORA's proposal to weight the ratios of actual versus targeted TRC cost-effectiveness results, peak kW savings and kWh savings is overly complicated, produces significant redundancy among the metrics included in the performance basis, and does not clearly promote performance that is consistent with the Commission's goals.

15. Staff proposes a performance basis that reflects net resource benefits, coupled with a minimum threshold based on Commission-adopted savings goals. This approach will encourage investments in cost-effective energy efficiency that are also designed to produce savings consistent with resource planning assumptions.

16. The specifics of how best to establish the minimum threshold should be addressed in a later phase of this proceeding, when we have an opportunity to evaluate all aspects of a risk/reward mechanism.

17. Weighting the TRC test of cost-effectiveness by two-thirds and the PAC test by one-third in the calculation of performance basis is preferred to an equal weighting of these two tests. As discussed in this decision, putting more weight

on the TRC results reflects our policy that the TRC should be the primary test of cost-effectiveness for ranking and funding resource programs. At the same time, including the PAC test in the performance basis appropriately acknowledges the dual-cost issue unique to energy efficiency investments.

18. Non-price components of avoided costs (e.g., environmental adders) are real costs to ratepayers and should be reflected in the avoided costs used to evaluate energy efficiency programs and their associated performance basis.

19. The Societal-variant of the TRC test treats certain cost components as transfers, e.g., tax payments and interest payments. These costs should be treated as explicit resource costs, consistent with the way they are treated in evaluating supply-side options.

20. The risk factors and environmental benefits that NRDC refers to in justifying a lower societal discount rate for evaluating energy efficiency are already reflected in the avoided cost adders we use to value program benefits. Moreover, utilizing a lower societal discount rate for energy efficiency makes it difficult to compare energy efficiency with alternative investments that use a market rate to present value future costs and benefits. In using a lower societal discount rate and treating certain costs as transfers, the Societal variant of the TRC test does not adequately reflect our view of energy efficiency in today's policy environment, namely, as a viable resource to more expensive supply-side resources.

21. Historically, the largest true-up adjustment to the ex ante performance basis for resource programs has occurred when actual program costs and verified program participation were substituted for the ex ante forecasted values.

22. Historical data for the pre-1998 programs also indicate that, for the IOUs combined, adjustments made to the performance basis based on the results of the

first-year load impact studies and the persistence studies generally cancelled each other out over time. However, these observed results may have been due to the policy environment during that time. Specifically, the close alignment of ex post and ex ante per unit savings may have been influenced by the fact that during these years, the program administrators and implementers knew they would be evaluated based on ex post performance, and therefore had the proper incentive to ensure quality control.

23. Looking forward, it is difficult to predict whether the same alignment between ex post and ex ante would occur if the performance basis was completely decoupled from ex post evaluation of per unit saving data.

24. On an ongoing basis, our adopted savings targets are likely to require program administrators and implementers to employ relatively new energy-efficiency savings measures and services for which solid ex ante information and data is not readily available or transferable. Adjusting the performance basis on the results of load impact studies is a necessary general policy to ensure quality control and to maintain the credibility of the energy efficiency programs.

25. The joint proposal of TURN, ORA and NRDC (Joint Parties) for performance basis true-up strikes a reasonable balance of our concerns: How to ensure quality control, maintain the credibility of the programs, and at the same time recognize the difficulty in tying the performance basis to true-up studies that are conducted many years after program implementation.

26. As recognized by the Joint Parties, it may not be necessary to true-up the performance basis using ex post load impact studies for some measures and/or programs, and the protocols should allow for appropriate exceptions.

27. Completed studies have shown that ex ante estimates of persistence studies have generally been reliable. The additional incentive obtained by tying

the performance basis to the persistence studies over time does not appear to merit the lengthy and difficult administrative process necessary to create that incentive. Moreover, calculating the performance basis utilizing ex ante assumptions of savings persistence over time will simplify our oversight process and shorten the timeline for administrator and implementer compensation.

28. As discussed in this decision, the approaches we have adopted in our administrative structure decision, our adopted Rules and EM&V framework is the best way to maintain quality control and credibility of program results, while encouraging innovation in program design and delivery. These approaches to encouraging innovation are much more appropriate than entirely eliminating *ex post* true-ups, as some parties propose.

29. Counting only the installations in a given year in calculating the performance basis, regardless of the year in which any given installation was funded, is consistent with the approach we adopted in D.04-09-060 for the way the IOUs should account for progress towards adopted savings goals. Moreover, this approach avoids the need for an additional true-up process (between commitments and actual installations), thereby allowing for a more timely calculation of performance basis for a given program cycle.

30. Reporting and tracking both installations and commitments for each program year will provide useful information for resource planning purposes and enable us to link program activities with a particular funding cycle, as needed.

31. The consensus workshop positions regarding the performance basis for non-resource programs provides a reasonable basis for further development, including the identification of outputs to be measured and evaluation methodologies.

32. The development of specific EM&V protocols and a cycle for EM&V that is integrated into the program planning and resource planning process should:

- a) Produce a standardized process for evaluating programs, reporting results and acting on results;
- b) Provide credible and objective information on program impacts and performances;
- c) Produce recommendations to improve program performance;
- d) Produce an accurate assessment of future opportunities to save energy; and
- e) Produce results that meet the needs of the ISO and resource planners in order for energy efficiency to be a viable resource.

33. In addition, EM&V efforts should be structured so that they can:

1) inform the program selection process, 2) provide early feedback to program implementers, 3) produce calculations of performance basis at the end of the funding period, and 4) feed back into the planning process for the program cycle.

34. As discussed in this decision, the schedule anticipated in D.05-01-055 for the filing of EM&V plans should be extended to allow for the development of EM&V protocols and other EM&V-related filings.

35. It is difficult, if not impossible, for the EM&V team to develop EM&V plans for the PY2006-PY2008 program offerings and associated protocols in a budget “vacuum.”

36. Estimates of where evaluation budgets should be set have generally ranged from about ten percent to about two percent of the program budget, according to the Framework Study. For the California IOUs, EM&V expenditures have ranged from a high of approximately 14% over the 1993-1996 timeframe to a low of about two percent of the program budget. This range does not including the broader range of EM&V activities that will be needed in the future to meet our EM&V goals (e.g., updates to potential studies). Moreover,

program evaluations during recent years have relied on deemed savings (*ex ante*) estimates or adjustments to deemed savings, a practice that requires less EM&V expenditures than those required true-ups based on *ex post* load impact studies.

37. A planning figure for EM&V of 10% of total program funding is a reasonable range to adopt for the PY2006-PY2008 program cycle, based on the above considerations.

38. Various EM&V protocols need to be developed in conjunction with the development of EM&V plans for the PY2006-PY2008 program cycle, as described in this decision.

39. Because the energy savings from the LIEE programs will also be counted towards the Commission-adopted goals, per D.04-09-060, the EM&V protocols associated with LIEE programs will need to be more closely coordinated with the EM&V protocols being developed in this proceeding.

40. Further guidance regarding the frequency and priority of various EM&V activities, as provided in this decision, should serve to facilitate the development of EM&V plans and protocols for PY2006-PY2008 energy efficiency programs.

Conclusions of Law

1. Today's adopted updates to the current Energy Efficiency Policy Manual, as reflected in Attachment 3, are reasonable and should be adopted.

2. The performance basis for resource and non-resource programs described herein is reasonable and should be adopted.

3. Consistent with today's direction, the EM&V team should develop EM&V plans and associated EM&V protocols, including an integrated EM&V cycle, for our consideration.

4. In order to proceed expeditiously with the planning process for the PY2006-PY2008 program cycle, this order should be effective today.

INTERIM ORDER**IT IS ORDERED** that:

1. The Energy Efficiency Policy Manual presented in Attachment 3, including the policy rules (Rules), terms and definitions contained therein, is adopted. This document may be updated in the future as provided for in the Rules.

2. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company and Southern California Gas Company, collectively referred to as the “investor-owned utilities” or “IOUs”, shall develop their energy efficiency program portfolios for 2006 and beyond in compliance with the Rules contained in the Energy Efficiency Policy Manual (Attachment 3).

3. As discussed in this decision, Energy Division shall clarify the energy efficiency reporting requirements to ensure that all IOU costs associated with energy efficiency are reported, including those recovered in base rates. All IOU costs shall be reported in estimates of program or portfolio cost-effectiveness on a prospective basis during the program planning cycle, as well as in calculations of the performance basis after program implementation. Energy Division shall also ensure that both installations and commitments are reported for each program year for energy efficiency activities beginning in 2006.

4. Energy Division shall independently review the cost-effectiveness calculations presented by the IOUs in their program year (PY) 2006-PY2008 program applications and compliance filings. Energy Division may hire a consultant (or consultants) to assist in this effort, the cost of which shall be paid for out of energy efficiency program funds. Upon completion, this review shall

be made available to the program advisory groups and filed with the Commission in the applicable program planning docket.

5. Programs that are designed to defer or avoid more costly supply-side alternatives are referred to as “resource programs.” These include programs that offer financial incentives (e.g., rebates) to customers to encourage them to install energy efficient measures or equipment. The performance basis for resource programs shall reflect the net resource benefits (energy savings minus costs) of the programs, utilizing a weighted average of the Total Resource Cost (TRC) and the Program Administrator’s Cost (PAC) tests of cost-effectiveness. As discussed in this decision, the TRC net benefits shall be weighted two-thirds and the PAC net benefits shall be weighted one-thirds in that calculation. The value of the energy savings for both the TRC and the PAC tests shall be calculated using the avoided costs that are adopted in R.04-04-025, including the non-price components (e.g., environmental adders). The TRC and PAC net benefit calculations shall be conducted utilizing the IOUs’ weighted cost of capital, as discussed in this decision. The savings and resource benefits counted towards the performance basis shall reflect installations in a given year, regardless of the year in which any given installation was funded.

6. The performance basis for resource programs shall include a minimum performance threshold that is tied to Commission-adopted kilowatt, kilowatt-hour and therm savings goals. The specifics of how best to establish that threshold is deferred until a later phase of this proceeding, when there is an opportunity to evaluate all aspects of an energy efficiency risk/reward mechanism.

7. The performance of the IOU program administrators after program implementation shall be based on portfolio performance. Calculating the

performance basis at the program level will be appropriate for measuring program implementer performance.

8. As discussed in this decision, the performance basis for resource programs implemented in 2006 and beyond shall be subject to the following:

- a. A true-up of *ex ante* (pre-installation) assumptions for program participation (e.g., types and number of measures or equipment) with actual participation verified on an *ex post* basis, i.e., during and after program implementation.
- b. A true-up of *ex ante* program costs assumptions with actual expenditure levels.
- c. As a general policy, *ex post* reevaluation of per unit kWh, kW and therm savings through load impact studies. An exception to the general policy may be appropriate for measures and/or programs for which there are well-established *ex ante* values with a high degree of confidence, and low external sources of variability that could influence the energy savings.
- d. Persistence studies will not be tied to the performance basis, but shall still be performed to inform future planning. This policy shall be revisited and revised, as appropriate, if there is evidence at a future date that the results of persistence studies are significantly different from the *ex ante* estimates.

9. The performance basis for non-resource programs will be measured based on the workshop consensus positions presented in this decision. These programs include statewide marketing and outreach, support for codes and standards, training and education, among others. Energy Division with input from other members of the Evaluation, Measurement and Verification (EM&V) team (see below) shall further develop each performance basis, so that measurable outputs and evaluation methodologies can be specified in EM&V protocols.

10. As directed in D.05-01-055, Energy Division and the IOUs, working with the California Energy Commission (CEC) and an ad hoc technical advisory group established for this purpose (referred to collectively as the “EM&V team”), shall

develop a joint proposal for EM&V plans for the PY2006-PY2008 program cycle. The scope of this task is expanded to include the development of EM&V protocols for both resource and non-resource programs and an integrated EM&V cycle consistent with today's direction. In developing the EM&V plans and associated protocols, the EM&V team should assume an EM&V budget of approximately 10% of total program funding for the PY2006-PY2008 program cycle for planning purposes. The EM&V team shall discuss their draft EM&V submittals in public workshops to obtain and incorporate feedback before finalizing them for our consideration.

11. As discussed in this decision, the EM&V team shall develop EM&V protocol submittals for the PY2006-PY2008 program cycle that include the following information:

- a. A protocol table for classifying each proposed program, based on characteristics such as program size, market segment, whether it involves new construction or retrofit applications, the performance basis and other considerations, in order to establish the type of studies that will be conducted under the EM&V plan.
- b. A cross-walk table between the type of study or studies required for each program classification and the specific outputs that will be generated for the calculation of the performance basis—either on a prospective basis for future programs or for true-up purposes for prior year programs.
- c. A protocol that describes the frequency for each type of study, by program classification. The combination of this protocol and b) above should provide a schedule for how frequently specific performance parameters (e.g., first year energy savings, program participation, expected useful measure lives, net-to-gross ratios, technical degradation factors, etc.) will be updated.
- d. Quality control protocols that provide directions for how to gather and analyze information for major study parameters, including acceptable methods for estimating load impacts, sample design and billing data requirements (as applicable), acceptable data collection methods,

acceptable confidence levels, approaches for dealing with uncertainty, recommended techniques for assessing and minimizing potential bias, among others.

- e. A schematic and accompanying description that illustrates the “integrated EM&V cycle”, that is, how the required studies will inform the program planning and resource planning process. This document should indicate when studies will be completed, how they will be submitted/made available for public review, and describe how the resulting updated information will feed into the next energy efficiency program planning cycle and/or resource planning cycles. In particular, it should present the schedule and process for updating the DEER database on a regular basis, using the results of *ex post* measurement studies.

12. In developing the EM&V plans and associated protocols for our consideration, the EM&V team shall take into consideration the guidance provided in today’s decision regarding the frequency and priority of various EM&V activities.

13. As discussed in this decision, the EM&V team shall also coordinate the study parameters for the 2005 load impact study being performed for the Low Income Energy Efficiency (LIEE) Program with the EM&V efforts underway in this proceeding. In the May 2006 filings for the 2006 Annual Earnings Assessment Proceeding (AEAP), the EM&V team shall present a joint proposal for the LIEE performance basis and associated EM&V protocols for our consideration, after obtaining public input on their joint proposal. The joint proposal shall be filed in the AEAP docket as well as in this rulemaking and the low-income assistance rulemaking, R.01-08-027.

14. Unless otherwise indicated, all EM&V-related filings required by this decision shall be filed and served no later than the due date for the program compliance filings required under Ordering Paragraph 9 of D.05-01-055, or October 1, 2005, whichever comes sooner.

15. Unless otherwise indicated, all EM&V-related filings required by this decision shall be (1) filed in the application dockets for the PY2006-PY2008 program plans and (2) served on the service list(s) in those dockets and in this Rulemaking in compliance with the Electronic Service Protocols appended to the Assigned Commissioner's December 22, 2003 ruling in this proceeding.

16. The Assigned Commissioner or Administrative Law Judge may, for good cause, modify the due dates established by this decision.

17. This proceeding remains open to address ongoing issues related to energy efficiency policies and programs.

This order is effective today.

Dated _____, at San Francisco, California.