

AGENDA

California Measurement Advisory Committee (CALMAC)

May 19, 2004

10:00 AM to 2:00 PM

Pacific Energy Center

851 Howard Street, San Francisco

PEC number is:

415-973-7220

The Conference Dial-in number is: **877-441-4895**

Pass Code: **243354**

10:00 --10:30 Update: CALMAC Website Committee update (Tim Caulfield, Equipoise)

10:30 --11:00 Update: 2002/03 DEER Study (Andrew Sickels, SDG&E)

11:00 --11:30 2004/05 DEER/Statewide EM&V study coordination (Shahanna Samiullah)

11:30 -12:00 Statewide program data requests, centralized data warehouse

12:00 --12:30 Lunch

12:30- 1:15 Schedule for Statewide '04/05 Studies: M&E data logistics, coordination possibilities

1:15 – 1:45 Pre-Protocol Measurement Standards

1:45 –2:00 Wrap up, next meeting

SIGN-IN

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CALMAC Website Committee Status Report
to
CALMAC Meeting - 05/19/04

Functions of the Site – As CALMAC is well aware the CALMAC.org site has a wide range of functions, some of which are:

1. Creates awareness of CALMAC through its web presence;
2. Provides home on the world wide web for CALMAC, the predecessor to CALMAC; and their committees and subcommittees;
3. Houses the CALMAC Searchable Database of California evaluation reports;
4. Provides a central source for contact information, agendas and minutes;
5. Provides a central source for California evaluation guidelines;
6. Provides a central location to post California evaluation related documents;
7. Acts as a portal for submitting files to be posted on site.

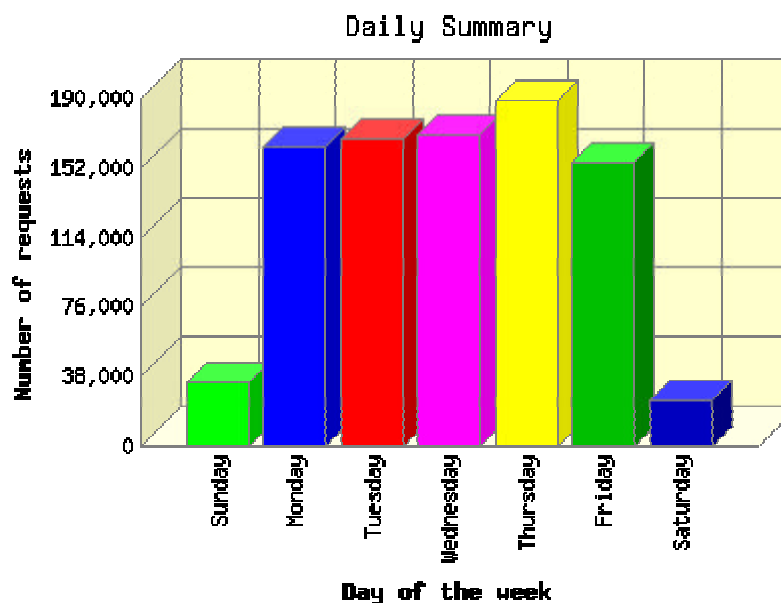
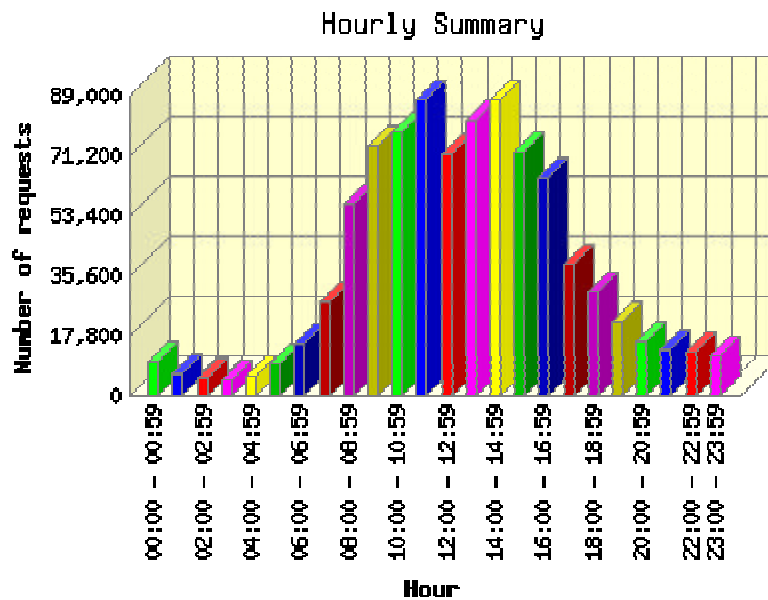
Public Communication – The website has come to be a central portal for communication of CALMAC related business. The primary communication modes are listed below

- **Postings** – The most common posting of files for central communication purposes (other than report files) are:
 - Agendas,
 - Minutes,
 - Filings Etc., - Frequently used to post CALMAC filings or documents that CALMAC wishes to be widely available. (e.g., CA Evaluation Framework study, etc.)
- **Listserves** – The website has developed a set of list serves. These list serves and their functions are discussed below:
 - Announcements – The CALMAC Announcements list serve is used to announce (1) new report availability on the CALMAC Searchable Database, (2) CALMAC or its committee's public meetings, (3) other evaluation related events. May not be use for any other commercial purposes.
 - Additional listserves exist for communications between Program Advisory Committees (PACs).
- **Rolling Banner** on Home Page – Used to announce upcoming events or to draw visitors attention to specific aspects of the site that are new or updated.
- **Planning** – Home Page Announcement and Link that can be easily updated to allow highlighting of events or posted files believed to be of importance.

Site Statistics – The following are the key statistics on the CALMAC website:

- **Searchable database** - As far as we know the CALMAC Searchable Database is the largest online database of evaluation reports, with 606 records as of 5/17/04. It currently has approximately twice as many as the next largest on-line evaluation report database, which has 322 records (CEE). The CEE database does not include California reports, but references the CALMAC search engine.
- **Hits** – Website usage can be summarized as follows:

- Since January of 2003 the website has averaged approximately 13,000 page request per month, with March '04 and April '04 at 16,108 and 14,620 respectively.
- The most common hours for visits are 8 AM for 5PM during weekdays. This suggests that the primary users are California based businesses. The figures below represent the sum-to-date of all page requests.



- During 2003 the visitors requested 95,000 Adobe Acrobat Portable Document File (PDF) documents (~7,600 per month). Since the vast majority of PDF documents on the site are in the searchable database, this

gives a very good indication of the number of reports requested from the searchable database.

- During April 2004, approximately 11,000 PDF documents were downloaded.

Numbering System - The Website Committee decided to establish a CALMAC.org numbering system applicable to the site, then just let programs administrators decide whether or how to use it for tracking the evaluation of their program. The Website Committee has agreed to a system that uses a three digit alpha code, followed by a four-digit numeric project code, followed by a decimal point and a two-digit report code. Entity codes and study numbers will be issued at the request of the entity responsible for the study, at whatever point in the study they wish, by the CALMAC Website Administrator.

Project to date Spent/Spending Status – The website project started in May of 2002 with the purpose of upgrading the website. The following table includes a summary of all spending to date for the website project, exclusive of CEC costs. CEC staff have retained the library function for the database, entering and announcing reports and distributing hard copies on request.

Spending to Date on Website/Database

Description	Budget	Spent to Date
Phase 1 – Initial re-arrangement of site and SoW development for Database Rehab. (Complete)	\$25,000	\$25,000
Phase 2 – Collection of all evaluation reports for programs post 1/1/94, creation of electronic files, creation of database structure, testing and launching site and database, continued development of site. Hosting of site. (Complete)	\$85,000	\$85,000
Phase 3 – Site maintenance and operation. Upgrading of site content, completion of policy manual and site documentation, promotion of site, training of user. Hosting of site.	\$50,000	\$15,981
Total	\$160,000	\$125,981

Discussion – Quarterly Reports – The CALMAC website currently has a page for CALMAC/MAESTRO Quarterly Reports. These reports are no longer required by the CPUC and, as a result the current report on the site is for the fourth quarter 2002. Does CALMAC intend to generate quarterly reports in the future or should this page be removed?

Policy Decisions Sought – The Website Committee is seeking policy decisions on two policy issues that it considers rise to the level requiring CALMAC endorsement of the policy. The two issues are presented in the attached document, along with the proposed policy and a summary of the pro and con arguments.

***Policy Positions Proposed by CALMAC Website Committee
For Review by CALMAC
May 11, 2004***

The CALMAC Website Committee seeks CALMAC review and approval of the following policy position. This issue arose during CALMAC Website Committee meetings between September 2002 and January 2004. The CALMAC Website Committee agreed upon a “proposed policy” and delineated statements for and against for the position. The committee feels that this key policy issues requires the concurrence of CALMAC. A CALMAC decision on this policy is urgently needed because the Website Committee cannot implement the proposed policy until it has been accepted by CALMAC, and many of the reports from the 2003-2004 period will be affected by these policies.

In addition to this policy decision, the CALMAC Website Committee has made many other working decisions on the site development, appearance, and operation that the committee did not feel rose to the level requiring approval from CALMAC.

Issue : Should studies from non-member organizations be posted to CALMAC website?

Proposed Policy: Studies posted on the CALMAC website shall:

- Cover market assessment, process, demand reduction or energy efficiency program evaluations conducted in California
- Be paid for via California Public Goods Charge funds or equivalent gas surcharge funds.

Pros:

- This policy clearly defines what reports are accessible on the website.
- This limits the website contents to documents from publicly funded studies related to CA EE programs.
- This would include third-party EE EM&V studies and Low Income reports.

Cons:

- This requires searching elsewhere for studies addressing non-CA EE and/or studies not funded by California’s PGC.

Status for the Update of the Database for Energy Efficiency Resources (DEER)

May 17, 2004

CALMAC Discussion Items

1. DEER website general administration and "Questions" link.
2. Process for updating the data values in DEER.
3. Inputs from Third Parties on 2005 Energy Efficiency Measures.

Task Status Update

Following is a listing by task of current status, the expected deliverables, and the timeline for providing the deliverables.

- **Task 1:** Kickoff Meeting and User Feedback – *Task Complete*
 - *Deliverables were the initial Workplan and a working paper on the results from the feedback survey*
- **Task 2:** Define Non-Residential Building Prototype Characteristics – *Original Task Complete but now working on new effort to incorporate T-24 2005 effects.*
 - *Initial working paper on non-residential building prototype characteristics distributed in June 2003. Lighting and equipment power densities, hourly profiles and profile scaling factors are still being reviewed. Any suggested changes are needed by the end of February.*
 - *The third draft of this working paper will be distributed to the Advisory Group by 5/24/04 and discussed at the 6/02/04 monthly Advisory Group conference call meeting. Final working paper on non-residential building prototypes – June 18, 2004.*
- **Task 3:** Identify List of Non-Residential Building DSM Measures *Original Task Complete but now working on new effort to incorporate T-24 2005 effects.*
 - *Working paper on weather sensitive non-residential DSM measures based on initial Workplan completed in July 2003.*
 - *Revised working paper on weather sensitive non-residential DSM measures based on review for 2005 standards consistency. The third draft of this working paper will be distributed to the Advisory Group by 5/24/04 and discussed at the 6/02/04 monthly Advisory Group conference call meeting. Final working paper – June 18, 2004.*
 - *Working paper on non-weather sensitive non-residential DSM measures based on initial Workplan completed in July 2003, revised October 2003, and revised January 2004.*
 - *Revised working paper on non-weather sensitive non-residential DSM measures based on review for standards in place by the beginning of 2005 – March 12, 2004.*

- **Task 4:** Review Current M&E Studies for Non-Residential Building DSM Measure Impacts – *Task Complete*
 - *Working paper on review of M&V for non-residential DSM measure impacts completed July 2003.*
- **Task 5:** Develop Weather Sensitive DSM Impact Estimates for Non-Residential Buildings – *Task Revised to include considerations of 2005 Standards.*
 - *Update MAS with non-res buildings except grocery and refrigerated warehouse including 2005 T24 measures and draft MAS working paper - August 20, 2004.*
 - *Update MAS with all buildings (including refrigeration, residential & mobile homes) and measures – October 29, 2004.*
 - *Final (tested and debugged) MAS and MAS working paper – November 30, 2004.*
 - *Working paper on benchmarking DOE-2 energy use output - November 30, 2004.*
- **Task 6:** Develop Non-weather Sensitive DSM Impact Estimates for Non-Residential Buildings – *Task Complete*
 - *Working paper (see Task 3) on non-weather sensitive non-residential DSM measures based on initial Workplan completed in July 2003, revised October 2003, and revised January 2004.*
 - *Revised working paper on non-weather sensitive non-residential DSM measures based on review for standards in place by the beginning of 2005 – March 12, 2004.*
 - *Delivery of non-weather sensitive non-residential data to Synergy – March 31, 2004.*
- **Task 7:** Residential Sector Single Family & Multi-Family – *Task Revised to include considerations of 2005 Standards.*
 - *Working paper on non-weather sensitive residential DSM measures based on initial Workplan completed in June 2003, revised October 2003, and revised December 2003.*
 - *Revised working paper on non-weather sensitive residential DSM measures based on review for standards in place by the beginning of 2005 – March 5, 2004.*
 - *Delivery of non-weather sensitive residential data to Synergy – March 19, 2004.*
 - *Residential prototypes and EEM descriptions for the weather sensitive measures as implemented into the MAS will be added to the spreadsheets developed for Tasks 2 and 3. Second draft distributed to advisory group 5/24/04, to be discussed in 6/2 conference call, and final draft distributed by 6/18/04.*
 - *Residential weather sensitive MAS development included within Task 5.*
- **Task 8:** Residential Mobile Home – *Task delayed to correspond with the Task 7 development.*

- *Review latest Robert Mowris results and review RASS survey analysis as related to mobile homes.*
- *Working paper on mobile home characteristics and EEMs – 6/18/04.*
- *Mobile home weather sensitive MAS development included within Task 5.*
- **Task 9:** Relocatable Classrooms – *Task deferred to next phase.*
- **Task 10:** Other Agricultural Related Measures – *Task deferred to next phase.*
- **Task 11:** Identify Measure Costs and Measure Lifetimes – *Task complete for non-weather sensitive. Task deferred to next phase for weather sensitive.*
 - *Measure costs and lifetimes will be added to the non-weather sensitive datasets provided to Synergy and included in the working papers for Tasks 6 and 7.*
- **Task 12:** Finalize Static Database of DSM Estimates – *Task complete for non-weather sensitive. Task deferred to next phase for weather sensitive measures.*
 - *Working paper on proposed DEER Website technical features completed in July 2003.*
 - *Working paper on final DEER Website technical features – May 4, 2004.*
- **Task 13:** Implement and Test Interactive Internet Search Tool of the Static Database – *Task Complete*
 - *Working paper on Internet Search Test Plan completed in July 2003.*
- **Task 14:** Define an Updating and Data Maintenance Process for the Database
 - *Working paper on a recommended updating methodology that includes coordination with on-going and future M&E projects coordinated under CALMAC by June 1, 2004.*
 - *Included in the Task 12 working paper is a section from Synergy that describes how to operate the data maintenance administration module feature to the static database – May 4, 2004.*
- **Task 15:** Provide Project Management and Progress Reporting – *Ongoing*
 - *Final report volume on building prototypes – July 15, 2004.*
 - *Final report volume on non-residential building measure definitions and impact estimation methodology – June 30, 2004.*
 - *Final report volume on residential building measure definitions and impact estimation methodology – July 15, 2004.*
- **Task 16:** Provide Regulatory Support [*no specific deliverable*]
- **Task 17:** Storage and Cataloging the 8760 Hourly Data for Weather Sensitive Measures – *Task deferred to next phase.*

2004 - 2005 Enhancements and Updates to the Database for Energy Efficiency Resources

Sponsor: Southern California Edison

Introduction

This document details the enhancements and updates to the Database for Energy Efficiency Resources (DEER) that are planned for 2004 and 2005. These planned enhancements are a continuation of the DEER Update effort that began in 2002/03. The current DEER database and the 2002/03 Update project provide estimates of the energy and peak demand impacts of energy efficient technologies.

The Project Advisory Committee in early February 2004 identified the need to use the new 2005 Title 24 building energy standards for baseline considerations, and that the 2001 baseline will not be of use in the next program planning cycle. However, inclusion of the 2005 standards meant a significant amount of new work was added to the 2002/03 project with no additional funding. To accomplish the additional work, four project tasks and subtasks, Relocatable Classrooms, Other Agricultural Measures, DOE-2 production runs and storing of the 8760 data, were deferred until the 2004/05 DEER enhancements. In addition, the task of defining a process to update and maintain the DEER database was reduced to providing a website based data maintenance administration tool. The 2004-2005 project will perform the deferred tasks, and will deliver a document that will establish one of the most important aspects of the DEER Update effort, namely providing a clear path, schedule, and identification of areas needing feedback from EM&V studies.

The DEER Enhancement project will produce the 8760 demand profiles deferred in the 2002/03 project and provide a tool that allows the profiles to be reduced into specified time-of-use (TOU) periods as opposed to simple annual summaries.

Another area of information need that was identified during the 2002/03 project was reportable savings. This involves collection of data that accommodates the additional need to have savings estimates above current code. The 2004 – 2005 enhancement will address this need by adding the Title 24 2005 vintage and “above current code” reporting capabilities to the DEER Measure Analysis Software (MAS) toolkit.

Study Objectives

The study’s overall objective is to continue the 2002/03 objective of providing potential users of DEER with better, updated, and additional information for use in energy efficiency programs.

Study Description:

The 2004 and 2005 DEER Enhancement and Update will have the following major tasks and deliverables:

1. Establish the Periodic Update Plan

The project will create and initiate the DEER Update Plan. The plan will set the schedule for future updates to the DEER in coordination with EM&V planning. The objective is to create a living document that establishes the basis of future updating, such as Title 24 updates, energy efficiency and procurement planning schedules, and EM&V study schedules. This document would be reviewed annually as part of the energy efficiency planning, procurement planning and statewide EM&V planning efforts. It is anticipated that CALMAC will conduct the review process of the Update Plan.

2. Adding a New Building Type

The study will add the re-locatable classroom building type to the DEER database. As a starting point, the 2002 study by Lawrence Berkeley Laboratory (LBL) and the Davis Energy Group that includes DOE-2 analyses of energy efficient technologies for this building type will be reviewed to determine its usability for the DEER Measure Analysis Software (MAS) Tool framework. If needed, a new analysis will be performed for this building type for MAS.

3. Adding New Measures for Agriculture

The study will add a limited number of dairy and pumping measures in the DEER database. For this task, the study will make use of secondary sources on deemed energy savings such as utility filings, results from completed emerging technology projects, codes & standards CASE studies, the Pacific Northwest's RTF, and Efficiency Vermont databases.

4. Collection and Developing of Time of Use (TOU) Profiles

Since the 2002/03 project has dropped the task of DOE-2 production runs, the new project will collect pre and post 8760 hourly data for the weather sensitive measures. Using this data, TOU profiles will be created for measures. For this purpose, TOU time frames will be identified that are unique to specific climate zones and utility service areas. For those measures whose impact is estimated outside of the DOE-2 model, TOU impact estimates will be developed for measures for which TOU demand factors can be identified. These TOU demand factors will be estimated from utility load data and other information where available and utilized to develop the TOU impacts for those measures. The project will also establish a recommended set of TOU profiles for the non-weather sensitive measures.

5. Production Runs, Reportable Estimates and Adding the 2005 Vintage

The project will provide the DOE-2 production runs deferred in the previous update project and the estimates of weather sensitive energy efficient measure impacts. The project will add the 2005 vintage and the necessary at current code production runs for reportable savings estimates "above current code." It is to be noted that the T24 2005 does not use **energy** to measure compliance; rather a Time-Dependent Valuation technique is used where each hour of electric/gas/propane use is multiplied by a climate

dependent hourly varying TDV value and the annual sum of these hourly products is compared (standard building to proposed building), and if the proposed building TDV value is less than the standard building, it complies. Thus, utility (or third party) programs that reference Title 24 for their energy reference value (i.e.; beats T24 by x%) will not have an energy value comparison basis. For non-weather sensitive measures, a review of the applicable 2006 standards will be also conducted to determine the impact of these standards on baseline and reportable savings.

6. Identifying and Developing DEER linkages to EM&V Studies

This study will pick up on the Task 14¹ of the 2002/03 updates to identify **specific** areas where the EM&V studies and the DEER prototypes now and in the future can be formally linked together. It will also identify and document what additional detailed information, such as inputs and assumptions for base models and energy efficiency measure models should be included in future EM&V studies. Doing so would provide verification of models and savings by having empirical data to back up these models. This formal linkage between EM&V studies and DEER necessitates a feedback loop between parties involved in these two areas on issues seen in the field.

.7. Identifying and Incorporating New Measures into the DEER Database

The study will review recent measure additions to energy efficiency programs, results of emerging technology projects and research, and code & standards studies to identify a list of measures that could be incorporated into the DEER database. This “living” list of measures will be maintained and updated periodically as part of the DEER Update Plan. This project will establish criteria to prioritize the list. The criteria may include technology maturity and availability, statewide energy savings and demand reduction potential, availability of an acceptable calculation methodology, etc. Based upon available funding, a select number of measures from this list will be incorporated during this update cycle, and the remaining measures left for future update cycles.

Study Deliverables

The major deliverables for this study will be an updated static DEER database, an enhanced MAS tool, a TOU software tool, and a report that details the following:

- The addition of the 2005 building vintage.
- The updates to the existing DEER that adds a complete set of new values representing a new re-locatable classroom building type, and several agricultural measures.
- The enhancements to the Measure Analysis Software tool to provide reportable demand and energy savings “above code.”
- A report that identifies and documents specific assumptions and inputs used to derive the DEER deemed savings values and link them to EM&V studies that

¹ The budget of Task 14 of the 2002/03 project was reduced to 1/3rd, which also reduced the work that was originally envisioned to be completed in the 2002/03 project.

allow for changes overtime and their impact, verification and updates of assumptions, etc.

- A complete set of 8760 profiles for the weather sensitive measures and a software tool that uses the profiles to create custom TOU profiles from the data. The system would be a flexible tool for developing load impacts according to the needs of the user. Such a tool would maintain the link with the DEER measures as they are updated over time.
- A set of TOU profiles for the non-weather sensitive measures,
- The DEER Update Plan document that will delineate the review and update cycle, and establish a prioritized list of measures for future DEER updates.

Study Schedule and Budget

Project Start date – May 2004

Project End date June 2005

Budget Estimate: \$300,000

MA&E 2003 STATEWIDE STUDY ADVISORY TEAMS

Lead Utility	Project	Lead or Advisor					
		PG&E	SCE	SDG&E/ SoCalGas	CEC	ED	ORA

CPUC-REQUIRED STUDIES

PG&E	CALMAC						
PG&E	CALMAC Website	Chris Ann	Pierre	Mary	sylvia, pete	Eli	
	CALMAC Forums	Valerie	Marian	Athena	Mike	Eli, Jay	Christine, Don
SCE	Eval Coordination/Framework	Valerie	Marian	Athena	Mike, Sylvia	Eli, Jay	
PG&E	Potential/Saturation Studies						
"	Update & Emerging Technologies	Chris Ann	Andrea	Rob	Sylvia, Mik	Eli, Jay	
"	New Construction	Mary Kay	Andrea/HMG	Henry		Eli, Jay	
"	Data Integration	Chris Ann	Andrea	Rob/Mary	Sylvia, Mik	Eli, Jay	
SCE	Market Share Tracking	Mary Kay	Rich	Rob	Sylvia	Eli, Jay	
PG&E	Best Practices Database	Kenneth	Pierre	Rob	Sylvia, Bill	Eli, Jay	
SDG&E	Deemed Savings Database	Craig	Shahana	Andrew	Mike	Eli, Jay	
SCE	Hard-to-Reach Update	Kenneth	Shahana	Mary			

STATEWIDE PROGRAM EVALUATIONS

	Residential Retrofit						
PG&E	Single Family Rebates	Kenneth	Shahana	Rob		Eli, Jay	
SDG&E	Multifamily Rebates	Kenneth	Shahana	Mary		Eli, Jay	
SCE	Home Energy Efficiency Surveys	Bea	Angela	Mary		Eli, Jay	
SCE	Res. Appliance Recycling	Kenneth	Shahana	Rob		Eli, Jay	
	Nonresidential Retrofit						
SCE	Standard Performance Contract	Rafael	Pierre	Henry		Eli, Jay	
PG&E	Express Efficiency	Bea	Pierre	Andrew		Eli, Jay	
PG&E	Audits (on-site)	Rafael	Pierre	Mary		Eli, Jay	
PG&E	Building Operator Training	Bea	Ed	Henry		Eli, Jay	
SCE	Emerging Technology Demo	Rafael	Angela	Mary		Eli, Jay	
	New Construction						
SCE	SBD - Bldg Eff. Assessment	Mary Kay	Rich/HMG	Mary		Eli, Jay	
	SBD - MCPAT	Mary Kay	Rich/HMG	Mary			
SCE	Energy Design Resources	Mary Kay	Rich/HMG	Mary		Eli, Jay	
PG&E	CA Energy Star New Homes	Mary Kay	Shahana	Henry		Eli, Jay	
	Cross-Cutting						
SDG&E	Residential Lighting	Kenneth	Shahana	Rob		Eli, Jay	
SCE	Education & Training Services	Bea	Ed	Mary		Eli, Jay	
SCE	Codes & Standards	Mary Kay	Rich/HMG	Henry		Eli, Jay	

MA&E 2004-5 STATEWIDE STUDY ADVISORY TEAMS

Lead Utility	Project	Lead (bold) and Advisors					
		PG&E	SCE	SDG&E/ SoCalGas	ED	CEC	ORA

CPUC-REQUIRED STUDIES

PG&E	CALMAC	Valerie	Marian	Athena	Eli, Jay	Sylvia, Mike	Christine, Don
PG&E	CALMAC Website	Valerie	Pierre	Mary	Eli	Sylvia	
SCE	Evaluation Framework/Protocols	Valerie	Marian	Athena/Rob	Eli, Jay	Mike, Sylvia	
SDG&E	2004-5 Summary Study	Chris Ann		Rob	Eli, Jay		
PG&E	EE Potential Updates	Chris Ann	Andrea	Rob	Eli, Jay	Sylvia, Mike	
PG&E	Industrial Energy Use Survey	Chris Ann	Andrea	Mary	Eli, Jay	Brian Alcorn	
SDG&E	Residential EE Onsite Survey	Chris Ann		Rob	Eli, Jay		
SCE	DEER Enhancements	Chris Ann	Shahana	Andrew	Eli, Jay	Mike	
SCE	Market Share Tracking Studies	Mary Kay	Rich	Rob	Eli, Jay	Sylvia	
SCE	NRNC Technology Trends	Mary Kay	Rich/HMG	Mary	Eli, Jay		
PG&E	Best Practices Database	Kenneth	Pierre	Rob	Eli, Jay	Sylvia, Bill	
CEC	Retrofit Upgrade Opportunities	Chris Ann	Ed	Len Bardsley	Eli, Jay	Bruce	
SCE	Hard-to-Reach Update	Kenneth	Shahana	Mary	Eli, Jay		
SCE	DR/EE Interaction-ACEEE	Chris Ann	Marian	Rob/Erica	Eli, Jay		

STATEWIDE PROGRAM EVALUATIONS

PG&E	Single Family Rebates	Kenneth	Shahana	Rob	Eli, Jay
SDG&E	Multifamily Rebates	Kenneth	Shahana	Mary	Eli, Jay
SCE	Home Energy Efficiency Surveys	Bea	Angela	Mary	Eli, Jay
SCE	Residential Appliance Recycling	Kenneth	Shahana	Rob	Eli, Jay
SCE	Standard Performance Contract	Rafael	Pierre	Henry	Eli, Jay
PG&E	Express Efficiency	Bea	Pierre	Andrew	Eli, Jay
PG&E	Audits (on-site)	Rafael	Pierre	Mary	Eli, Jay
PG&E	Building Operator Training	Bea	Ed	Henry	Eli, Jay
SCE	Savings By Design	Mary Kay	Rich/HMG	Mary	Eli, Jay
PG&E	CA Energy Star New Homes	Mary Kay	Shahana	Henry	Eli, Jay
SCE	Emerging Technology Demo	Rafael	Angela	Mary	Eli, Jay
SCE	Education & Training Services	Bea	Ed	Mary	Eli, Jay
SCE	Codes & Standards	Mary Kay	Rich/HMG	Henry	Eli, Jay

OTHER STATEWIDE EVALUATIONS

???	Upstream HVAC and Motors	Bill Miller		Andrew
SCE	UC/CSU/IOU Partnership	Betsy	Kevin	Rob

PIER DEMAND RESPONSE RESEARCH CENTER

BACKGROUND

The California Energy Commission's Public Interest Energy Research (PIER) program is launching a Demand Response Research Center (or "Center") led by Lawrence Berkeley National Laboratory. Funding is anticipated to be in place in spring 2004, pending full Commission approval.

As a guiding principle, Center activities will be multi-institutional in concept and operation. LBNL will host the Center; guide Center development; and provide technical, operational and planning leadership. The new Center director will solicit stakeholder input and adopt research topics accordingly. The Director will also seek the most qualified performers. A significant proportion of research will be done by researchers outside of LBNL.

Demand Response (DR) includes: (1) **load response for reliability purposes**, (2) **load response for procurement cost minimization purposes (e.g., load bidding)**, and (3) **price response by end-use customers for bill management**. Load response is typically attained through interruptible tariffs and direct load control programs. Price response can be attained through time-of-use rates, dynamic pricing, and demand bidding programs.

Two main drivers for widespread demand responsiveness are the prevention of future electricity crises and the reduction of average electricity prices. Additional goals for price responsiveness include equity, through cost of service pricing, and customer control of electricity usage and bills.

CENTER OBJECTIVES AND SCOPE

The main objective of the Center is to develop, prioritize, conduct, and disseminate research that develops broad knowledge that facilitates DR. The DR research will cover technologies, policies, programs, strategies and practices, emphasizing a strong connection to the DR market and policy makers through substantial stakeholder input. Key stakeholders in the Center include system developers, aggregators, program implementers, utilities, industry trade associations, state policy makers, researchers, building owners, engineers, and operators, building equipment manufacturers, other end-use customers.

The Center will focus on the following activities:

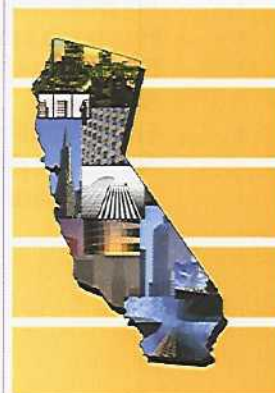
- Create a research roadmap for DR in California
- Establish multi-institutional partnerships
- Foster connections with stakeholders through outreach efforts
- Sustain long-term attention to DR research topics
- Conduct research, development, demonstrations, and technology transfer

The Center's research agenda will be crosscutting, practical, and relevant, with a goal of fostering an understanding of the complex factors that influence "what works." The Center research agenda will initially cover four major DR research categories:

- Policies, programs, and tariffs
- Utility markets, technology, and systems
- Customer and end-use technology and systems
- Consumer and institutional behavior



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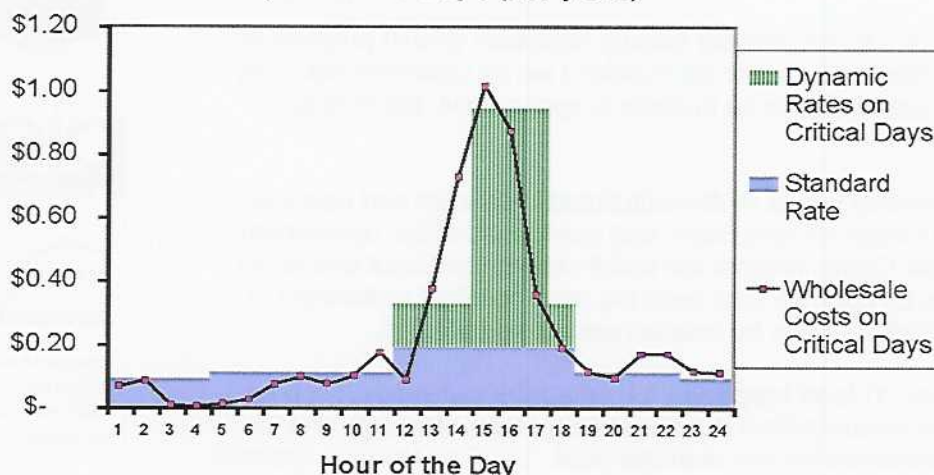


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E-19 Hourly Price of Electricity on Critical Summer Weekdays (about 10 days per year)



NOTE: All prices shown in the above graph are purely hypothetical and for illustrative purposes only.

FURTHER INFORMATION

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Forthcoming web site:
drcc.lbl.gov

Further information on
PIER can be found at:
www.energy.ca.gov/pier

Further information on
current PIER DR
Research can be found
at:

Consortium for Electric
Reliability Technology
Solutions (CERTS,
certs.lbl.gov)

Center for the Study of
Energy Markets (CSEM,
[www.ucei.berkeley.edu/
power.html](http://www.ucei.berkeley.edu/power.html))

Demand Response
Enabling Technology
Development (DRETD,
ciee.ucop.edu/dretd)

STAKEHOLDERS AND MARKET CONNECTIONS

A major element of the Center will be the strong market connection developed for each and every project. A concerted effort will be made to involve a variety of stakeholders in Center planning and on the actual research teams. Technical Staff will also be chosen from these stakeholders including: industry trade associations, researchers, building owners, engineers, and operators, and building equipment manufacturers.

In addition to the broad-based involvement of stakeholders as described above, market connection strategies will include:

- An extensive web site and an Internet-based newsletter
- Research reviews and evaluation summaries
- Project brochures and papers summarizing research results for multiple audiences
- Educational material for utility, building associations, and related organizations
- An annual DR research conference
- Semi-annual project briefings for key stakeholders