



# California Commissioning Collaborative Advisory Council Meeting Minutes

**June 10, 2010**

Doubletree Monrovia

9:30 a.m. – 3:20 p.m.

## Attendees

### Advisory Council

Randall Higa, SCE

Tony Pierce, Facility Dynamics

Shane Schroeder, Target

Mark Walter, Keithly Barber Associates

### Board of Directors

Jim Parks, SMUD

Southard Jones, Pacific Gas & Electric (for  
Greydon Hicks)

Chuck Poindexter, San Diego Gas & Electric

Glenda Towns, So Cal Gas

### CCC Staff and Consultants

Phil Welker, California Commissioning Collaborative (Executive Director)

Kirstin Pinit, California Commissioning Collaborative

## Guests

Robert Austin	EMC Engineers
Bob Baker	American Commissioning Group
John Beck	EMC Engineers
Vince Bethel	Jet Propulsion Laboratory
Doug Chamberlin	EnerNOC, Inc.
Beth Chambers	California Energy Commission
Stephen Clarke	Best Infrared Services
Eliot Crowe	PECI
Erik Emblem	3 E International Incorporated
Kathy Gumbleton	SCE
Bela Gutman	Jet Propulsion Laboratory
Tia Hansen	Newcomb Anderson McCormick
Craig Hofferber	American Commissioning Group
Alden Jenkins	Jet Propulsion Laboratory
Mugi Lukito	Southern California Edison
Christopher Mellen	EnerNOC, Inc.
Joel Murphy	City of Pasadena
Denise Nicholson	McKinstry
Lee Overvold	McKinstry
Amanda Potter	PECI
James Reese	Nexant
Heather Schopplein	E&A Engineering/EMSI
Minh Tran	EMCOR Energy Services
Bing Tso	SBW
Pranesh Vonugupal	Nexant
Patty Zambrano	Southern California Edison

## Welcome, Introductions, and Announcements

Phil Welker called the meeting to order at 9:30 a.m. Attendees introduced themselves.

Kirstin Pinit and Phil Welker provided updates on CCC projects and recent activities:

- The CCC Cx Guides are being used by several entities including Natural Resources Canada and the NJ Institute of Technology.
- Title 24 Training for Building Inspectors and Plans Examiners are planned throughout 2010. Additional information is available by contacting [info@cacx.org](mailto:info@cacx.org).
- The CCC has commenced a Codes and Standards Enhancement (CASE) Study to explore the potential for including design review requirements in Title 24. SCE is funding the project.
- The CCC is working with the CPUC to develop action plans and next steps for achieving commissioning-related milestones in the California Long-Term Energy Efficiency Strategic Plan (CLTEESP).
- The California Building Standards Commission will convene a Commissioning Task Force to identify and address challenges in implementing the commissioning requirements in CalGreen building standards. The CCC will participate with other industry stakeholders. Initial meeting is scheduled for 6/21/10, and follow-up meetings or subgroups are expected.
- The CPUC's Rulemaking 09-11-014, Ruling and Scoping Memo, Phase 1, addresses the EM&V policies and procedures for energy efficiency programs. The CCC will monitor this proceeding.
- Recent changes to the CCC Board of Directors were announced. Current Board of Directors and Advisory Council lists are available on the CCC website.

## Commissioning Industry Hot Topics

*Phil Welker, CCC*

Mr. Welker discussed some of the key issues that are frequently discussed in the Cx industry, why they are of concern, and how the CCC has already reacted to these issues.

**Standardization** – There is concern from many segments of the Cx industry about standardization, both of the Cx process and of the professionals who carry it out. There are calls to standardize the qualifications or certification of Cx professionals and to standardize results, metrics and scopes.

The CCC activities related to standardization include:

- Publishing the California Commissioning Guides for New and Existing Buildings
- Publishing the Guideline for Verifying Existing Building Commissioning Project Savings – Using Interval Data Energy Models: IPMVP Options B and C
- Developing RCx templates and spreadsheet tools
- Providing instruction for building owners on how to select a provider (<http://www.cacx.org/resources/selecting.html>).
- Current PIER-funded research on verification of savings, savings calculation tools, and persistence of commissioning.

**Persistence** – Primary barriers to persistence of commissioning benefits are the lack of building O&M staff training, building staff turnover, and a need for professionalization of the building operator occupation. Additional concerns with persistence relate to the use of performance metrics and benchmarks as well as the cost/availability/practicality of tools and technology for ongoing monitoring.

The CCC activities related to persistence include:

- PIER research on Best Practices for Maintaining Energy Savings from Retrocommissioning, which will culminate in RCx Persistence Guidelines
- Potential projects to achieve commissioning-related milestones in the CLTEESP action plan

**Training and Workforce Development** – Training is needed for Commissioning Agents (CxAs), building operators and building owners. There is not sufficient hands-on technical training available and universities and junior colleges are slow to offer new classes. Multiple CxA certifications, their comprehensiveness, rigor and relevant are also concerns.

The CCC activities related to persistence include:

- Working with the BSC to clarify CalGreen commissioning requirements, including selection of commissioning providers to oversee commissioning as required by the code.
- Online resources for building owners including a description of available certifications on the CCC website.
- Potential projects to achieve commissioning-related milestones in the CLTEESP action plan

## **PEIR Program Advisory Committee (PAC) Meeting**

*Eliot Crowe, CCC Program Manager & Beth Chambers, CEC Contract Manager*

Eliot Crowe reviewed the PIER projects and provided status updates on each of the 5 projects:

- Project 2: Energy Info + CRE Transactions
- Project 3: RCx Tools
- Project 4: RCx Persistence Guidelines
- Project 5: Verification of RCx Savings
- Project 6: Title 24 Requirements/Effectiveness

Three key 'hot topics' were highlighted and discussed:

1. Related to all projects: With such a wide variety of outreach media available, what would be good additions to the well-established outreach activities such as conference presentations, guides, CCC webinars, and posting to the CCC website?
2. Related to project 4, Persistence Guide: Research on key building performance metrics has not resulted in a clear picture of best practice, or identified potential interview candidates who are using their Energy Management System to track key metrics.
3. Related to project 6, Title 24 acceptance testing: As the 2011 version of Title 24 is being rolled out, the team needs to keep track of the current state of the industry, and realign goals if required.

Mr. Crowe presented two case studies on Energy Performance Tracking, developed for Project 4. These case studies highlighted how multiple energy performance tracking methods can be applied to satisfy management and engineering needs. Case studies illustrated the application of benchmarking, 'top down' and 'bottom up' energy performance tracking, and the management structures that underpin successful energy performance tracking.

## **2006-08 RCx EM&V Report**

*Bing Tso, SBW*

Bing Tso summarized the CPUC Evaluation, Measurement and Verification (EM&V) results from the 2006-08 California RCx Portfolio (23 programs). The presentation covered the determination of gross savings, net savings, and a high level estimate of Effective Useful Life (EUL). The scope of the presentation included objectives, methodology, results, and recommendations.

## **New Approaches to Savings Calculations for RCx Programs**

*Mugi Lukito, SCE*

Mugi Lukito started his presentation by explaining the structure and process used for the SCE RCx Program as well as the results of the '06-'08 Program. Results from the '06-'08 Program indicated that RCx M&V data was not consistent and frequently inadequate and that the RCx Providers were frustrated by the burdensome review process. This led to a recommendation that energy savings calculations and baseline data collection be standardized, while allowing for a tiered approach with varying degrees of rigor based on impact.

Ultimately a team of industry experts collaborated to develop an approach to energy savings calculations that allows measures with less than 75,000 kWh or 30% of site gas consumption to take advantage of

pre-calculated or deemed savings based on minimal input parameters. Those measures with saving above this threshold will still undergo customized analysis and calculation. The deemed savings are determined by the Building Optimization Analysis Tool (BOA Tool), which includes 11 HVAC measures and 2 lighting measures (BOA is the working title for the tools, and may change).

This tool will continue to be developed and will be used in the '10-'12 SCE and PG&E RCx Programs.

## **Constant Commissioning: Technology Solutions for Establishing Baselines and Maintaining Building Performance**

*Doug Chamberlin, EnerNOC*

Mr Chamberlin presented a real world example of how EnerNOC applied Constant Commissioning on a university campus. The presentation highlighted the complex realities of planning and installing the monitoring hardware, and demonstrated the typical features of the software.

## **Wrap - Up**

*Phil Welker*

Mr. Welker invited attendees to propose topics for the next CCC meeting. Suggestions and requests may be sent to [info@cacx.org](mailto:info@cacx.org).

Upcoming CCC meetings are:

<b>Date</b>	<b>Host</b>	<b>Location</b>
September 16	PG&E	TBD
December 2	Sempra (SoCal Gas)	Downey

The meeting adjourned at 3:20 p.m.