



California Commissioning Collaborative

California Commissioning Collaborative Advisory Council Meeting

June 10, 2010

Hosted by Southern California Edison



Agenda

9:30 a.m.	Welcome, Introductions and Announcements	Phil Welker, CCC Kirstin Pinit, CCC
10:00 a.m.	Commissioning Industry Hot Topics	Phil Welker
10:30 a.m.	BREAK	
10:45 a.m.	PIER PAC meeting	Eliot Crowe, PEI Beth Chambers, CEC
11:45 a.m.	LUNCH	
12:45 p.m.	2006-08 RCx EM&V Report	Bing Tso, SBW
1:30 p.m.	New Approach to Savings Calculations for RCx Programs	Mugi Lukito, SCE Southard Jones, PG&E
2:15 p.m.	BREAK	
2:25 p.m.	Constant Commissioning: Technology Solutions for Establishing Baselines and Maintaining Building Performance	Doug Chamberlin, EnerNOC
3:10 p.m.	Wrap-Up	Phil Welker
3:20 p.m.	Advisory Council Meeting Adjourns	

Introductions & Announcements

CCC Updates

- CCC Commissioning Guides in use
 - Natural Resources Canada adaptation of new construction guide (www.canmetenergy.nrcan.gc.ca/cx_guide.html)
 - NJ Institute of Technology included RCx process diagram in brochure for their local utility energy conservation program
- Title 24 Training for Building Inspectors and Plans Examiners
 - Developed by CCC/CEC, marketed through CALBO, presented by SMACNA
 - 5 workshop to date: Sacramento (x2), San Jose, San Diego, and City of Industry (attendance 15-20)
 - Upcoming workshops: San Leandro, 6/30 & Fresno, 7/8
 - SMACNA planning 1-2 sessions per month on-going

CCC Updates

New Project: Design-Phase Cx Codes And Standards Enhancement (CASE) Study

- Objective
 - Identify possible code requirements related to early design decision-making processes that will positively impact energy efficiency and building operations and are based on commissioning best practices.
- Key Research Activities:
 - Establish current practice baseline through practitioner survey
 - Develop code proposals
 - Develop CASE study

CCC Updates – Policy Activities

CA Long-Term Energy Efficiency Strategic Plan (CLTEESP)

- CPUC identified CCC as a “champion” for Cx
 - Leadership in developing action plans for 2 Cx milestones
 - Participate in regular meetings on progress and next steps
- Initial outcomes
 - CCC recommendations to be adopted; tactical plans to follow
 - Opportunity to get involved in other Cx-related aspects of the plan

CLTEESP Goal 2: Commercial EB

Strategy 2-5: Develop tools and strategies to use information and behavioral strategies, commissioning, and training to reduce energy consumption in commercial buildings.

- Milestones 2-5-2 : Strengthen tools and practices for building Cx
- Milestones 2-5-3: Strengthen Building Operator Certification (BOC) training for Cx

Strengthen tools and practices for building Cx

- Enable consistent and cost-effective delivery of **comprehensive Cx services**
 - Holistic approach; integrated set of measures
 - Persistence strategies to make sure savings last
- Impacts
 - Increased **energy savings** resulting from deeper analysis of opportunities and implementation of improvements
 - Improved **persistence** of benefits by ensuring improvements are maintained over time
 - Increased **cost-effectiveness** of EBCx for owners and utility programs
 - Greater **market awareness** and increased uptake of the practice

Milestone 2-5-2 Roadmap

Action 1: Identify, assess, and eliminate barriers to implementation of EBCx as a comprehensive energy efficiency solution.

- Develop or enhance tools, training and guidance

Action 2: Hone outreach and incentive strategies to improve market adoption of EBCx.

- Increase uptake of EBCx through private initiatives and utility incentive programs

Action 3: Establish EBCx approaches for underserved market sectors.

- Develop approaches, tools, training for high priority sectors (eg. grocery stores, retail, small office, data centers)

Action 4: Promote EBCx as a comprehensive and long-lasting solution to reducing whole-building energy use in commercial buildings.

Strengthen Building Operator Certification Training for Cx

- More skilled operators are needed to achieve and maintain energy savings through EBCx
- Existing Cx material is introductory; need for more depth and hands-on experiences to build essential skills
- Impacts
 - Increased **energy savings** in commercial buildings
 - Improved **persistence** of energy savings over time

Milestone 2-5-3 Roadmap

Action 1: Enhance BOC materials with hands-on instruction and activities, focused on functional testing and the use of diagnostic tools.

Action 2: Expand BOC's Energy Performance Tracking curriculum beyond benchmarking to cover more sophisticated tracking tools/methods.

Action 3: Improve outreach in California to increase participation in BOC program.

BOC recommendations developed in collaboration with Northwest Energy Efficiency Council, administrator of national BOC program

CCC Updates – Policy Activities

- CalGreen Building Code
 - Effective January 1, 2011
- CCC participating on BSC Cx Task Force
 - Provide support/guidance on Cx requirements
 - Initial meeting June 21
 - Follow-up meetings, sub-groups, tasks TBD
- Details on CalGreen
 - BSC website: <http://www.bsc.ca.gov/CALGreen/default.htm>
 - CCC meeting presentation (Dan Burgoyne, Oct, 2009): <http://www.cacx.org/calendar/index.html>

CCC Updates – Policy Activities

- Rulemaking 09-11-014 (Ruling and Scoping Memo, Phase 1)
 - Review of CPUC EM&V practices
 - Potential changes to policy & framework prior to IOU planning for 2013-2015 program cycle
- Building Star legislation (proposed)
 - Bill introduced in March; up to \$6 billion in rebates and tax incentives for existing commercial and multi-family buildings
 - Comments on Cx issues



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Commissioning Industry Hot Topics

June 10, 2010
Phil Welker, CCC



Top Industry Issues

- Standardization
- Persistence
- Training & Workforce Development

Standardization

- Qualifications, expertise, certification, license
- Scope specification at the building-type level
- Outcomes, metrics

Concerns

- Commoditization of the process
- Limits CxA's from applying expertise/experience
- May not address uniqueness of a given building

Future

Establish minimum standard for process and deliverables

- Owners able to request/evaluate Cx quals and services

– *OR* –

Let the market work it out

- CxAs focus on own best business practices, let the industry filter out low bids and low quality

Standardization – CCC's Role

Publicly Available Resources

- California Commissioning Guides for New and Existing Buildings
- Guidelines for Verifying Existing Building Commissioning Project Savings - Using Interval Data Energy Models: IPMVP Options B and C
- RCx Toolkit – templates and spreadsheet tools
- How to Select a Provider
(<http://www.cacx.org/resources/selecting.html>)

Persistence

Most believe building O&M staff training, turnover, and professionalization are the greatest barriers

- Knowledge transfer from CxA to operators

Other Issues

- Utilizing performance metrics, benchmarks
- Cost, availability, practicality of tools/technology for M&V and ongoing monitoring

Future

It's fundamentally about people

- Address knowledge gap between CxA and operators
- Keep CxA involved in the building over time

Innovative technologies and tools are available – need innovative owners to go there

Persistence – CCC's Role

PIER Research

- Best Practices for Maintaining Energy Savings from Retrocommissioning (RCx Persistence Guidelines)

Potential work to come under CLTEESP action plans

- Support long-term persistence of energy savings
 - Develop/enhance & promote standardized Cx approaches and tools
 - Enhanced Cx training for building operators

Training/Workforce Development

Concerns

- Training needed for everyone (CxA, operator, owner)
- Not enough technical hands-on training; universities and junior colleges are slow to offer new classes
- Multiple CxA certifications confuse owners; no guarantee of quality

Future

Need to create a much bigger CxA profession

- Promote Cx career path; engage young engineers and train them

Certification should be culmination of training & experience

- Certification organizations should come together and standardize (scope, outcomes, knowledge transfer)

Address the building operator knowledge gap

Training/Workforce Development – CCC's Role

Commissioning Provider Certification Descriptions

– http://www.cacx.org/resources/provider_cert.html

- Work with BSC to clarify CalGreen CxP certification requirement

Potential work to come under CLTEESP action plans

- Enhanced Cx training for building operators

15 Minute Break



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PIER PAC Meeting

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Eliot Crowe, PECl

Beth Chambers, CEC



Lunch



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2006-2008 RCx EM&V Report

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Bing Tso, SBW





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New Approach to Savings Calculations for RCx Programs

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15 Minute Break



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

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Doug Chamberlin, EnerNOC



Wrap Up

Next Meeting: Thursday, September 16

Location: TBD

Host: PG&E

Agenda Topics

- PIER PAC meeting – project updates and discussions
- Technical reports or case studies?
- Your suggestions and requests are welcome

2010 Meeting Schedule

Date	Host
Sept. 16	PG&E
Dec. 2	Sempra (SoCal Gas)

Adjourn

*Thanks to SCE
for hosting the meeting today!*