



Goal 2: Residential Quality Installation Committee September 21, 2016 Meeting Final Notes

Call to Order

The meeting was called to order at 10:04 am PDT by Buck Taylor, Chair, Roltay, Inc.

Roll Call

5 of 9 voting members are needed for a quorum. 7 of 9 voting members, 4 non-voting members and 2 guests/staff attended. There were 13 total attendees at this meeting. Bob Sundberg facilitated the online Webex and call conference, recorded the meeting and produced summary meeting notes.

| WHPA Goal 2: RQI Committee VOTING Members | | | | Roll Call |
|--|----------|----------------|--|-----------|
| ACCA (Air Conditioning Contractors of America) | Wes | Davis | Contractor Association | P |
| Benningfield Group | Russ | King | Third Party Quality Assurance Provider | |
| DNV GL Energy Services (formerly KEMA) | Zachary | Connolly | Energy Efficiency Program Consultant | P |
| Energy Analysis Technologies | Chris | Ganimian | Third Party Quality Assurance Provider | P |
| Mechanical Systems Design & Consulting (MSDC) | Jeff | Henning | Educator, Trainer | P |
| NCI (National Comfort Institute) | Scott | Johnson | Educator, Trainer | |
| Henry Bush Plumbing, Heating and Air Conditioning and Home Energy Solutions (Redlands Plumbing & Heating & AC) | Tyler | Miner | Contractor (Residential) | P |
| Roltay Inc. | Buck | Taylor (Chair) | Other Stakeholder | P |
| Superior Air | Larry | Kapigian | Contractor (Residential) | P |
| WHPA Goal 2: RQI Committee NON-VOTING Members | | | | |
| Air Conditioning Contractors of America (ACCA) | Glenn | Hourahan | Contractor Association | |
| Air Conditioning Contractors of America (ACCA) | Donald | Prather | Contractor Association | |
| Air Conditioning Contractors of America (ACCA) | Todd | Washam | Contractor Association | P |
| ASHRAE | | | Engineering Society | |
| BuildingMetrics | Pete | Jacobs | Energy Efficiency Program Consultant | |
| Building Performance Institute | Jeremy | O'Brien | Certifying Body | |
| CEC (California Energy Commission) | Jeff | Miller | Government | |
| CPUC/ED (California Public Utilities Commission - Energy Division) | | | California PUC | |
| Clean Energy Horizons, LLC | Norm | Stone | Energy Efficiency Program Consultant | |
| Davis Energy Group | David | Springer | Energy Efficiency Organization | |
| EPA/ENERGY STAR | Chandler | Von Schrader | Government (Other than CPUC) | |
| ICF International | Casey | Murphy | Energy Efficiency Program Consultant | |
| Misti Bruceri & Associates, LLC | Misti | Bruceri | Energy Efficiency Program Consultant | |
| PG&E (Pacific Gas and Electric Company) | David | Bates | California IOU | |
| PG&E (Pacific Gas and Electric Company) | Marshall | Hunt | California IOU | |
| PG&E (Pacific Gas and Electric Company) | Swapna | Nigalye | California IOU | P |
| Quinn-Murphy Consulting LLC | Patrick | Murphy | Educator, Trainer | |



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|---|----------------|-----------------|--|---|
| Sacramento Municipal Utility District (SMUD) | Ravi | Patel | Publicly Owned Utility | |
| SDG&E (San Diego Gas & Electric) | Collin | Smith | California IOU | |
| SDG&E (San Diego Gas & Electric) | Jeremy | Reefe | California IOU | |
| SCE (Southern California Edison) | Lori | Atwater | California IOU | |
| SCE (Southern California Edison) | Anne Marie | Blankenship | California IOU | |
| SCE (Southern California Edison) | Scott | Higa | California IOU | |
| SCE (Southern California Edison) | Steve | Clinton | California IOU | P |
| SCE (Southern California Edison) | Jarred | Ross | California IOU | |
| SoCalGas (Southern California Gas Company) | Harvey | Bringas | California IOU | P |
| ZONEFIRST | Richard | Foster | Controls (Manufacturer or Distributor) | |
| WHPA Goal 2: RQI Committee Pending Candidates | | | | |
| WHPA Goal 2: RQI Committee NON-VOTING Guests | | | | |
| Aire Rite Air Conditioning and Refrigeration | Don | Langston | Contractor (Nonresidential) | |
| Benningfield Group | Lynn | Benningfield | | |
| Building Performance Institute | John | Jones | Certifying Body | |
| California Public Utilities Commission (CPUC) - Energy Division | Pete | Skala | California PUC | |
| CDH Energy | Hugh | Henderson | Energy Efficiency Organization | |
| CLEAResult (formerly PECE) | Michael | Blazey | Energy Efficiency Program Consultant | |
| CLEAResult (formerly CSG) | Mike | Withers | Energy Efficiency Program Consultant | |
| Field Diagnostic Services | Dale | Rossi | Third Party Quality Assurance Provider | |
| Galawish Consulting | Elsia | Galawish | Energy Efficiency Program Consultant | |
| ICF International | Ben | Bunker | Energy Efficiency Program Consultant | |
| Johnson Consulting** | Katherine | Johnson+ | | |
| Johnson Controls Inc. (JCI) | Bryan | Rocky | HVAC Manufacturer | |
| National Comfort Institute | Rob | Falke | Educator, Trainer | |
| NIST (National Institute of Standards and Technology) | Piotr | Domanski** + | | |
| NIST (National Institute of Standards and Technology) | Vance | Payne**+ | | |
| PG&E (Pacific Gas and Electric Company) | Mary | Anderson+ | California IOU | |
| PG&E (Pacific Gas and Electric Company) | Sam | Choe+ | California IOU | |
| PG&E (Pacific Gas and Electric Company) | Robert | Davis | California IOU | |
| PG&E (Pacific Gas and Electric Company) | Leif | Magnuson | California IOU | |
| SCE (Southern California Edison) | Joseph "Dario" | Moreno | California IOU | |
| SCE (Southern California Edison) | Andres | Fergadiotti+ | California IOU | |
| SCE (Southern California Edison) | Sean | Gouw | California IOU | |
| Tre' Laine Associates | Pepper | Hunziker | Energy Efficiency Program Consultant | P |
| WHPA Staff | | | | |
| BBI (Better Buildings Inc.) | Mark | Lowry | WHPA Executive Advisor/BBI COO | |
| BNB Consulting/WHPA staff support | Bob | Sundberg | Energy Efficiency Program Consultant | P |



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|---------------------|------|-----------|------------------|--|
| Empowered LLC | Shea | Dibble | WHPA Co-Director | |
| WHPA emeritus staff | Mark | Cherniack | | |
| | | | | |

*** Organization is Not a Member of the WHPA; + Individual is NOT Registered with the WHPA*

(P) following last name = Member/Registrant is Pending Approval from the WHPA Executive Committee

To avoid repetition, the name of the member organization will not be repeated in the body of the minutes; the individual names of meeting participants will be used.

Approve Minutes of Previous Meeting

August 17 meeting draft notes were distributed August 22. Revisions received were incorporated into the notes. Finalized meeting notes would be posted to the WHPA site under the RQI Committee.

AGENDA

| Topic | Discussion Leader | Desired Outcome |
|---|------------------------------|--|
| Welcome, roll call, previous meeting minutes, new members, candidates and guests, new business topics | Buck Taylor and Bob Sundberg | Produce an accurate record of all attendees, finalize and approve past meeting minutes, welcome new members and guests, identify new business. |
| Review previous Action items and meeting agenda | Buck Taylor | Resolve older items, determine status of current action items, finalize meeting agenda items. |
| NEWS: Industry, IOU, Regulator announcements – RQI PROGRAM 2017 STATUS | Buck Taylor and Bob Sundberg | Keep committee members aware of WHPA related subjects and issues |
| WHPA In-Person Nov. meeting – Chair proxy/representative | Buck Taylor | A member would volunteer to represent the committee at the WHPA In-Person Nov. meetings. |
| Work Product introductory document | Buck Taylor | Gather attendee input to help revise the document. |
| Working Session: review proposed work product and suggestions – Code to Standard 5/9 comparison table | Buck Taylor | Progress on approach to comparison and comparison table. |
| Set next meeting date, time and tentative agenda items | Buck Taylor and Bob Sundberg | Meetings are normally scheduled the third Wednesday of each month. |

Welcome New Members and New Guests; consider new member candidates

- Samuel Lerman, CEC, advised staff that he had a new CEC position outside of HVAC and would no longer be participating on this or other WHPA committees. Staff would continue to encourage one of Sam’s and Jeff Miller’s (CEC engineering staff) colleagues more involved in policy to participate on this committee.
- Lola Odunlami, CPUC, moved out of HVAC. Carmen Best introduced Stephen Rickert as the new HVAC lead at the September 21 Executive Committee meeting. He’ll need to get registered with the WHPA and indicate the WHPA committees he is interested to join. He’ll be encouraged to participate on this committee as Lola.



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Review past Action items

NEW ACTION ITEMS:

August 2016 ACTION: Buck Taylor volunteered to draft an explanatory introductory paragraph for the proposed code/standards informative comparison table the committee would develop. Completed.

PREVIOUS ACTION ITEMS:

July 2016 ACTION: WHPA staff would like to request CEC staff assistance for this committee in locating where at the CEC site a case initiative report could be located which would reveal the cost attributed to a HERS inspection for a new residential system. Samuel Lerman and Jeff Miller were asked for assistance. Ongoing.

STATUS: No response to date.

July ACTION: Jeff Miller, CEC, would help identify other staff members more involved with policy and implementation based on AB 802 and provide the Chair and committee staff with contact information. Ongoing.

April 2016 ACTION: Lori Atwater, SCE, committed to having the IOU leads provide the RQI Committee members with a summary of the IOUs HVAC ResQI strategy. Ongoing.

April 2016 ACTION: IOU program leads (Lori Atwater/SCE, Swapna Nigalye and Leif Magnuson/PG&E, Collin Smith/SDG&E) would provide committee chair and staff with IOU HU program manager and HU Working Group contact information as well as other key HU representatives (ICF or another implementer staff) going forward. Ongoing.

April 2016 ACTION: Once provided with HU/Advanced HU contact information, Chris Ganimian would contact the HU Working Group co-directors to request attending a future RQI Committee meetings and coordinate RQI Committee members possibly attending HU program related meetings. Pending

New Business

November 17/18 WHPA In-Person Leadership meeting in Pasadena, CA

Buck Taylor indicated that the only way for WHPA committee chairs to participate was in person. He was not going to be able to attend in person and didn't believe that the meetings would be made available for remote attendance. He asked whether there were any members in the state who would probably be attending IHACI the previous data who would consider representing the committee and attending in his place. Several members were considering the offer. They were asked to contact Buck and Bob if they would consider attending as the RQI C. representative.

IOU Representative Program and Issue Updates

No discussion.

NEWS – Buck Taylor

SCE RQI Program 2017 status

Buck Taylor – utilities submitted initial program budget filings dated August 31 which were public documents. He thought the SCE filing indicated they were terminating the RQI program as it currently existed. The monetary value placed at the RQI line was \$0.00. He didn't know if that meant those dollars were to be shifted to another larger program like Energy Upgrade California, Home Upgrade or not. He noted that SDG&E had reduced their budget but would continue with a smaller offering. PG&E was conducting a high performance HVAC installation pilot/study (HPHI) and had an increased budget. It was not clear what that budget would cover. He asked Swapna Nigalye what PG&E was planning.



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Swapna Nigalye, PG&E, indicated that they intended to continue their residential installation training program. They would look for results from the HPHI pilot/study before developing further program plans around that approach to residential installation. She hoped to have more details that she could share at the next committee meeting.

The group talked about the possible fate of the SCE RQI program. Lori Atwater was not in attendance to possibly provide some additional information.

Chris Ganimian, Energy Analysis Technologies, offered that there were some references from Lori in a notification which he'd received. He read through some of the emailed letter for the group. The notification mentioned that the energy efficiency program business plan was scheduled to be submitted to the CPUC January 2017 and a response was expected within a few months that would include comments on SCE's direction. It also mentioned Energy Upgrade California programs were avenues for rebates to RQI contractors. There was reference that in 2017 the Advanced Home Upgrade, which included the RQI pathway, would no longer be available. The IOU HVAC effort would be focused on contractor education and explore capturing existing baseline for implementation of AB802 utilizing diagnostic tools and utility smart meter data. In the future, the whole house retrofit program could incorporate RQI standards, which promised to deliver increased energy savings, as more contractors understood the benefits of improved comfort and lower energy bills.

Chris added that there was some talk of developing a pilot to explore implementation of AB802. There was some talk of developing a pilot to explore implementation of AB802.

Buck Taylor commented that they'd need to defer to Lori about whether further information about the SCE program strategies could be made available since they were already in the process of program planning. But, the program budget filings were public documents available, after registration, at the CEDARS site.

<https://cedars.sound-data.com/>

[The California Public Utilities Commission welcomes you to the California Energy Data and Reporting System \(CEDARS\).](#)

CEDARS is a modular online solution focusing on data submission, validation, and communication.

CEDARS enables Program Administrators to:

- Submit quarterly and annual claims
- Submit annual budget filings and program documents
- Manage filing program definitions
- Receive real-time quality control feedback
- **Track submission history**

The group talked about and speculated on what direction the RQI program might take, whether it would totally disappear, be absorbed by EUC/HU and whether contractors not yet participating in Home Upgrade should start participating.

Bob Sundberg, WHPA staff, suggested they could ask Lori whether that communication could be shared with committee members and guests. Buck Taylor agreed.

Zack Connolly, DNV GL recommended the committee become engaged with following and/or commenting on the IOU business plans when they came up for public comment which he thought would be in October. More information could be obtained at CAEECC.org, the California Energy Efficiency Coordinating Committee.



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Buck Taylor cautioned that that very committee was the one for which the CPUC had issued special guidance about participants and conflicts of interest that might compromise their ability to bid on future work in California. The committee and its members would love to provide that sort of direct input but doing so might well be damaging to members future business. They'd not received any final guidance for individual organizations that would encourage direct participation. That was why the committee was looking to provide proactively developed guidance such as the code to standards comprehensive comparison goal to the utilities rather than potentially being put in jeopardy for responding to IOU requests on specific program elements. Also, as Bob Sundberg had clarified, since the WHPA was, itself, an IOU program, it was not eligible to become a party to those proceedings as an organization or for the WHPA or its committees or working groups to directly comment.

Zack Connolly thought that it was pretty common for third party implementers to comment on those plans once they became public without compromising their future ability to bid on work. He didn't have a legal opinion but suggested they participate with that group whenever and however possible. Even if the committee couldn't comment, it would benefit them to review the plan documents to gain a better understanding of the IOU vision for the future related to the new rolling portfolio approach to program development, planning and implementation.

RQI Work Session – Buck Taylor

Codes & Standards comparison work product introductory document

The previous two committee meetings included discussions about some details of a draft comparison table. It was suggested that the comparisons were quite detailed and any user would benefit by having an explanatory document, like a user guide to help walk them through the table. Buck Taylor volunteered to draft a short starter document for the committee to consider.

Buck Taylor positioned the introductory document as a way to position the codes to standards extensive comparison table. Market players seemed often to be talking past each other with very different understandings of the underlying issues which had a major impact on RQI savings, what code could provide, what RQI required in addition to code and those issues of limited installation code compliance and baseline assumptions. In California, the way savings was required to be calculated, RQI programs would never be considered "cost-effective," in Buck's opinion. California had "codified" specific measures it concluded delivered savings as a basis for evaluation in order to justify or protect the use of ratepayer funds for energy efficiency programs.

The group discussed issues which should be covered or referred to in the introductory document. The document could also serve as a means to explain the major points of departure and the sort of impact and issues which resulted from those differences.

EXAMPLES:

- The degree of code enforcement and inspection compliance was considered very low.
- Savings calculations required by the CPUC currently assumed 100% code and inspection compliance. This formed the basis for the current marketplace "baseline" of system performance.
- Only savings above that level of code compliance performance would be considered for RQI program additional savings.
- Prescriptive compliance with California Title 24 code did not require the sort of load calculation combined with equipment selection and system design which Standards 5/9 required believed to result in neglect of significant program delivered savings.
- There was a clear questions of how current HERS inspectors and building inspectors could become capable and expert regarding unit/system performance evaluation beyond checklists of inspection item compliance. Were the performance evaluation measurements even part of the current prescriptive code compliance process? Probably not in the vast majority of cases. Also, who was really responsible for system design and who for whether the installation met code.



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- The current approach for program evaluation was to only address specific energy efficiency measures which IOUs included in their program claimed savings work papers – NOT the actual energy usage which would be measured at the building meter and then disaggregated to determine the HVAC portion.
- The significant potential energy savings for correcting and/or avoiding system operational errors documented in the NIST Annex 36 Heat Pump study was not being considered by the CPUC to improve their evaluation methodology.

Buck Taylor concluded that providing an introductory document was not just helpful but would be a necessity if readers and user of the comparison table were to fully comprehend the huge difference between a prescriptive code and a national standards foundation for determining a more accurate assessment of program delivered savings. Buck asked everyone to read through the draft document and provide him with their comments and suggestions.

Chris Ganimian suggested a goal for 2017. That the committee develop suggestions for an IOU pilot intended to implement AB 802. The baseline should be developed to include levels for non-program code compliant installations as well as installations without code compliance or inspection. Older units would be performance tested as well as the newly installed unit with system modifications completed. System performance test-in vs. test-out. The outgoing system would be collected to contribute to building the “as is” baseline performance basis which AB 802 directed.

Larry Kapigian, Superior Air, stated that he thought it might not be easy to project dollar savings directly but it was quite simple, he’d found, to project kWh & kW differences and project that to annual savings.

Buck Taylor responded that he agreed. The problem was that the CPUC assumed baseline was that 100% of installations complied with Title 24 but that in the evaluation of IOU claimed savings, the projected savings was then discounted to a much smaller level of compliance and the degree to which they believed technicians would even follow code requirements correctly and consistently. That seemed to him an obvious contradiction. Through a rough calculation, out of 100,000 possible installations, maybe 500 were actually installed correctly according to the current CPUC approach to discounting program claimed savings. It wasn’t statistically possible to have 100 % compliance used to establish the baseline for comparison when they themselves required discounting of those same permitted, inspected jobs within a program.

Further, how would they create a pilot for AB 802? How would you establish a more accurate baseline and then how to compare a newly installed system to that baseline taking into account all those code requirements? Did it really matter whether or not all of those savings were being achieved by code compliance if the actual installations delivered significantly greater savings which could be proven through test-in vs. test-out comparison of old to new system and verified through current vs. past actual building meter records? Using meter data, programs could learn how to find those potential jobs with that greatest impact for the greatest savings. With this sort of data based evaluation, contractors would be motivated to look for jobs with great savings attention. Not just do any/all jobs that might or might not generate savings to milk a program. Provide an incentive for contractors to go out and find those high savings jobs for the program. Then, the results wouldn’t be watered down and it would be far easier to justify the program.

Next Steps/Closing Comments/Adjournment

The next meeting was tentatively set for Wednesday October 19 at 10:00 to 11:30 am PDT - for 1.5-hour. Meetings were normally scheduled for the 3rd Wednesday of each month.

1. Members were encouraged to get their suggestions for revising the introductory document into Buck Taylor before the next meeting.
2. Any members interested in representing the RQI Committee at the WHPA In-Person meeting November 16 & 17 should let Buck know and copy Bob Sundberg on their willingness.



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Tentative agenda items for the next meeting would include:

- Review of the information table introductory document which Buck Taylor would revise from member input
- Further refinement of the codes to standards comparison table

Buck Taylor adjourned the meeting at 11:37 am PDT.

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ACTION Item summary below.

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| Summary of Action Items and Key Decisions (from above) |
|---|