



Goal 2: Residential Quality Installation Committee July 20, 2016 Meeting Draft Notes

Call to Order

The meeting was called to order at 10:18 am PDT by Buck Taylor, Roltay Inc. and Chair, after a FC.com audio access delay.

Roll Call

5 of 9 voting members are needed for a quorum. 5 of 9 voting members, 10 non-voting members and 2 guests/staff attended. There were 17 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	
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	P
Henry Bush Plumbing, Heating and Air Conditioning and Home Energy Solutions (Redlands Plumbing & Heating & AC)	Tyler	Miner	Contractor (Residential)	
Roltay Inc.	Buck	Taylor (Chair)	Other Stakeholder	P
Superior Air	Larry	Kapigian	Contractor (Residential)	
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	
ASHRAE			Engineering Society	
BuildingMetrics	Pete	Jacobs	Energy Efficiency Program Consultant	P
Building Performance Institute	Jeremy	O'Brien	Certifying Body	P
CEC (California Energy Commission)	Samuel	Lerman	Government	
CEC (California Energy Commission)	Jeff	Miller	Government	P
CPUC/ED (California Public Utilities Commission - Energy Division)			California PUC	
Clean Energy Horizons, LLC	Norm	Stone	Energy Efficiency Program Consultant	P
Davis Energy Group	David	Springer	Energy Efficiency Organization	P
EPA/ENERGY STAR	Chandler	Von Schrader	Government (Other than CPUC)	P
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)	Marshall	Hunt	California IOU	



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Company)				
PG&E (Pacific Gas and Electric Company)	Swapna	Nigalye	California IOU	P
Quinn-Murphy Consulting LLC	Patrick	Murphy	Educator, Trainer	
Sacramento Municipal Utility District (SMUD)	Ravi	Patel	Publicly Owned Utility	
SDG&E (San Diego Gas & Electric)	Collin	Smith	California IOU	P
SDG&E (San Diego Gas & Electric)	Jeremy	Reefe	California IOU	
SCE (Southern California Edison)	Lori	Atwater	California IOU	P
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	
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 PECl)	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	P
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	



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			Consultant	
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
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

June 22 meeting draft notes were distributed June 29. 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.
Executive Committee Update – 1) “Quality” in committee names, 2) potential conflict of interest issue with IOU planning	Buck Taylor and Bob Sundberg	Keep committee members aware of WHPA wide subjects and issues
EUC/Home Upgrade/Adv. HU and RQI program coordination update	Collin Smith	Members understand status of program integration; incentive level realignment or other program revisions/plans for revision.
Working Session – 1) review proposed topics and suggestions, 2) review 2012 White Paper topics, 3) begin outlining key market transformation barrier topics	Buck Taylor	Understand and agree to 2016 goals, begin outlining barrier topics to tackle.
Market Barriers	Buck Taylor	Prioritize market barrier topics and select top ones to begin working
Set next meeting date, time and tentative agenda items	Buck Taylor and Bob Sundberg	Meetings are normally scheduled the third Wednesday of each month.



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Welcome New Members and New Guests; consider new member candidates

- Welcome Jeff Miller, CEC, new guest member as of May.
- Todd Washam, ACCA, WHPA registration June 9. Director of ACCA Industry Relations. Works with all states, all utilities and industry associations.
- Joseph “Dario” Moreno, SCE. Invited to visit by Lori Atwater, SCE, in her absence.

Review past Action items

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 other 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

June 2016 ACTION: Collin Smith, SDG&E, would provide the committee with an update in July following their meeting with the new Home Upgrade program advisor.

STATUS: Collin reported that he had met with the new HU advisor who came from a non-HVAC background and who was still getting oriented to her program details. She seemed receptive to standards required of RQI contractors. No idea at this time if/how HU program might be revised.

June 2016 ACTION: Buck Taylor committed to collecting a list of these topics and suggestions into a bullet list. At the next meeting they could sort the list into categories from his first proposed list and see if they wanted to expand or reorganize the categories of issues/barriers. COMPLETED.

New Business

None.

IOU Representative Program and Issue Updates

None.

Executive Committee June Meeting Update – Buck Taylor

No further updates from July Executive Committee (EC) meeting. Buck’s expectation was that it would be later in the year, at best, before the committee might expect a response from the EC regarding any guidance related to potential for conflict of interest.

RQI 2016 Goals – Buck Taylor

Buck Taylor, Chair, shared the three SMART Goal topics recently approved for this committee:

- 2016 SMART Goal Topics:
 1. Develop a 2016-17 communication plan to communicate RQI needs to influence policy and implementation
 2. Assist in the integration of RQI and Whole House while protecting the integrity of QI fundamentals
 3. Provide input into appropriate business plans as requested



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2012 RQI Committee Market Barriers White Paper Topics

1. **Program Implementation Barriers** – The current energy savings documented in DEER do not seem to provide an adequate incentive for utilities to sufficiently stimulate the market for the purpose of accelerating adoption of QI and QM. There is a cost required to overcome decades of industry complacency in the areas of training, mentoring, and compelling verification. In the absence of credit for providing the high level of contractor support required, utilities may be able to offer little more than a standard equipment replacement program.
2. **Program Participation Barriers** – Contractors have not adopted standards-based QI in large numbers because there is a significant cost to do so. Contractors must commit to technician training, purchasing instrumentation, lost business to contractors who are not willing to comply with QI standards and/or Title 24, and the risk of failing. Perhaps most importantly though is the fact that customers are not demanding the level of service required by the utilities and have not demonstrated that they are willing to pay for it. Customers are more likely to make purchasing decisions based on price rather than competence.
3. **Code Inconsistencies** – Title 24 needs to better align with industry standards. Much of what Title 24 has tried to do is regulate workarounds that simplify the design and installation process rather than create the provisions for enforcing industry standards.
4. **Verification Barriers** – Assuming that the necessary code improvements are made and an effective enforcement mechanism is created, then better trained HERS raters will be required to verify compliance with industry standards. The current crop of HERS raters have not been trained to the level required to confirm the proper design and commissioning of residential HVAC systems.

Buck Taylor provided a list of 7 topic groups to help start the committee discussion. He hoped that they could select the three top topics of interest before the group tried to go into any great detail. His expectation was that they could make progress on one or two this year and publish their 2016 findings in a work product that would help IOU program design and planning as well as be of value to California rate payers.

1. Lessons Learned
2. Market Barriers
3. EM&V
4. Program incentive uniformity
5. Alternate methods/models for load calcs, savings verification, load reduction, alt. programs
6. Technical issues
7. Program design and implementation

Jeff Henning, Mechanical Systems Design & Consulting (MSDC), commented that they had attended a recent state sponsored meeting at which A CEC spokesperson had commented that the SCE RQI program was not cost-effective. That topic would fit under the #2 Market Barriers group. The CPUC is the organization which stated the goal for RQI becoming the industry standard by 2020. He thought that statement needed to be addressed, answered before they put any further effort toward trying to improve the actual program.

Buck Taylor agreed that if the state was really committed to moving towards a standards based goal, how the program was currently being evaluated was a very serious issue. He suggested that one work product the group could elect to complete would be a comparison table between ACCA Standard 5/9, verified quality installation, and Title 24 code requirements to clarify the similarities and also great differences between them. What was actually required and done when complying with QI according to the standard vs. what was assumed to be done under Title 24. One major difference in his mind was that in the RQI program you actually had people going out and checking, verifying each requirement of the sizing, design and installation. That extra verification step was where he thought the cost-effectiveness criticism played out. If HERS raters were also supposed to be verifying installations, how often, how well and how could that be any more cost-effective if it was an equal verification effort. He thought they might try to



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illustrate those differences. If the CEC and CPUC were going to be managing by budget, that's where they should be focusing their studies.

Pepper Hunziker, Tres' Laine Associates, commented that those differences would be very valuable as the HVAC ACTION Plan was being revised. The committee could really add value by exploring how cost-effectiveness was currently being determined, issues with that approach and explanations of the language being used. She also asked whether anyone from CEC was on the call and an active member of the committee.

Bob Sundberg, staff, responded that Samuel Lerman had been a member for several years but he couldn't recall him ever attending a meeting. Jeff Miller, a mechanical engineer, had recently joined the WHPA and had been invited to a couple of recent meetings but hadn't attended any to date. (Bob Sundberg sent an urgent email to Samuel and Jeff during the meeting requesting their attendance. Jeff Miller replied and later joined the discussion.)

Chandler Von Schrader, EPA, ENERGY STAFF, cost-effectiveness was a serious issue when they introduced their initial ENERGY STAFF QI program. They were unable to get traction due to the hand holding, physical requirements and relatively high cost of verification to ensure that the system was put in right. He asked whether Buck or anyone was aware of the CEC changing their position on RQI cost-effectiveness as automated validation, smart system methods of verification came into play? Maybe providing more confidence that system installations were hitting key performance metrics. Would this not change the CEC's opinion if these new methods could greatly reduce the costs for verification?

Buck Taylor replied that he didn't think the big problem in California revolved around the cost of verification. He thought it was the fact that the baseline for performance assumptions was so high. Because of the way the baseline is established, the IOUs cannot get recognized for the actual savings being delivered. In California, both the numerator and denominator for cost-effectives (approved savings/cost to deliver program) are bad. To answer Chandler's question, with the reduction in a skilled workforce, moves to introduce new technology would have to be part of the answer. Eventually, a lot of the physical measurements would have to be automated. At the core of the question regarding RQI is the design and sizing question. He was convinced, that part could not be automated. With meter data, energy usage data would become available for analysis with past systems or operation. But, at the end of the day when IOUs write their energy savings work papers, they would still be compared to the current baseline unless something major could be changed. It would be interesting to know, to ask the utilities whether cutting the program implementation costs in half would have a significant impact on program cost-effectiveness.

Chris Ganimian, Energy Analysis Technologies, volunteered that those numbers had been looked at by SCE several years ago. It was determined that a major reduction in implementation costs would not have a major impact on program cost-effectiveness. The verification process was very front end loaded with contractors needing lots of support as they entered the process and become more proficient as they progressed, which would require much less support. Their samplings and verifications were greatly reduced so the implementation cost burden became much lower as time went on. This has been the way it has worked for the vast majority of participants.

Pete Jacobs, BuildingMetrics Inc., circled back to Pepper's original question. He'd previously participated in case initiative studies where the IOUs helped the CEC consider new energy efficiency measures and code requirements. As part of the CEC's process for accepting a code change or new requirement, they do have to evaluate and prove cost-effectiveness. They use "time-dependent validation" which assigns the cost of saving energy on an hourly basis. It was his understanding that all costs and savings had to be considered. Labor and material, inspection costs all had to be included.

Buck Taylor asked what cost was then assigned to a HERS on-site inspection? Was that included in the cost-effectiveness calculations? In Work Order 32 RQI program evaluations, wouldn't the difference in



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inspection/verification HERS inspection costs have to be broken out for the RQI installation vs. the “to code” installation comparison?

Pete Jacobs responded that for specific values, you’d have to go back to the case initiative reports as part of the TRC calculations. Each case initiative report for each code change or adoption should be available at the CEC site under Title 24. Non-energy related costs attributed to health and safety would not be included in an energy efficiency code revision or new requirement case initiative report cost-effectiveness calculation.

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 would be asked for their assistance.

Norm Stone, Clean Energy Horizons, commented on the difference between how cost-effectiveness was considered by IOUs as compared to the CEC. IOUs considered cost-effectiveness in the context of ratepayer funds used for a program vs. the benefits accrued. The combination of educational programs and resource programs which produced energy savings had to give an overall portfolio TRC cost which was acceptable. The energy savings were always determined based on current code baselines. As system or component technology advanced and the baseline assumed energy efficiency rose, the window of savings which a utility could claim became narrower and narrower.

Lori Atwater, SCE, added that she believed there had been a clarification ruling issued by a CPUC administrative law judge (ALJ) just a couple of days before related to AB 802 and use of existing condition baseline based on meter energy data. If AB 802 gets implemented, utilities would be able to claim savings based on the HVAC improvements which were made and verified by the difference in energy use for existing conditions. If program savings could be claimed on this basis, that would represent an opportunity to have a cost-effective QI program. She didn’t think there was a way to have QI programs re-calculated to be considered cost-effective without implementation of AB 802.

Buck Taylor replied that he didn’t think that any HVAC program with administrative costs could ever be considered cost-effective because Title 24 assumed that those energy efficiency measures were already being done and were accounted for in the baseline. His suggestion was to include meter based savings in their revised claimed energy savings work papers, start collecting meter data and see what they got. If all your homes had smart meters, you should be mining before/after meter data.

Lori Atwater agreed that they should start doing that. They could already do comparison of energy use from smart meter data. The remaining challenge would be to separate out the HVAC load from total energy use. They’d need analytics to aggregate those separate uses.

Buck Taylor said those analytics already exist. CALTRACK was already developed for that purpose. And, BPI and ACCA were already working on developing a national standard for just that application. He didn’t believe the utilities could wait for decisions and implementation fine details. They had to start writing business plans and program plans. The worst that could happen would be that regulators could say they weren’t comfortable with that idea. If that idea appeals to the committee, they could put a check next to it and plan on drilling down to flesh out more detail for the work product. He thought it deserved that attention and effort.

<http://www.caltrack.org/caltrack.html>

Pepper thought that the language being used contributed to the gap between how much the program was achieving and how it was being interpreted by other stakeholders (regulators). She thought it was a matter of being communicated in a better way in order for others to see the value. She thought of several examples including regard for program cost-effectiveness and on the validation and verification side. Having it show up in a way that resonates with the evaluation team.



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Bob Sundberg, WHPA staff, responded that the point Buck had made earlier was that having regulators value the RQI program more highly didn't depend upon language or better explanations. Program cost-effectiveness and approved energy savings were based on policy assumptions like all installations already complied with Title 24 requirements and utility programs were ineligible to claim any of that savings on any RQI program installations. Until those policies were addressed effectively and changed, calculations that determined program energy savings and program cost-effectiveness would also not change. Regulator policy had to be changed. The assumptions on which current policies were based had to be successfully challenged with data, evidence and sound arguments.

Pepper responded that policy needed to reflect what was reasonable, prudent and feasible out in the field. That shared language was necessary in order to prove out those results. If performance metrics were in a shared language with what the CEC/CPUC expectations were, what the results were in the field, that would create some kind of consistency and continuity. There shouldn't be a great disconnect between the expectations and the results. How savings was proposed and how it was evaluated.

Buck Taylor agreed, that was what should be the case, but wasn't. The baseline for system performance was being defined by Title 24 being absolutely adhered to in every installation, which was very different from what actually occurred out in the field. It was that gap between what should be and what was actually occurred that was being discussed. The nuance this discussion was uncovering was that current policy was based on a belief in something absolute, that ALL installations complied with Title 24 requirements. Regulators need to shift their thinking to recognize that life wasn't absolute and all installations did not comply with Title 24 requirements and deliver the savings which that compliance assumed. There are different segments of a society which can afford different energy savings measures. The role of utilities was to provide services and programs to reach hard to reach markets to provide pathways to improved energy efficiency no matter what the strata or level. The utilities need to find a way to make improved energy efficiency their (the public's) decision, for each level within the society.

Regulators were defending an ideal. The only way to win and change that perspective would be with better evidence. Utilities need to stop waiting for somebody else to provide that evidence. The utilities certainly have the resources and access to better data to pull up meter records and develop better evidence that their programs are delivering greater energy savings than regulators currently approve.

Chris Ganimian asked whether anyone had a good idea for what the implementation timeline was for AB 802? He asked Lori Atwater whether the CPUC as well as the IOUS accepted AB 802?

Jeff Miller, CEC, joined the meeting and the current discussion. He said he wasn't a resource for AB 802. Jeff agreed to help identify and invite other CEC staff to join this group and discussion who were more involved with policy implementation based on AB 802.

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.

Buck Taylor thought the most valuable thing this committee could do for the IOUs was to provide guidance during this changing marketplace. He understood that they were going to be filing their business plans, program implementation plans and energy savings claims under current policy until AB 802 was fully adopted and rolled out. These AB 802 based changes might take two years or more. Until that time, maybe the best thing this committee could do would be to provide guide on how IOUs could optimize their program, reach a broader audience, empower more contractors to be able to offer EE improvements all the way up to a re-designed and installed system.



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Norm Stone suggested they still needed to decide based on what the ratepayers should fund. For many of the other larger and more general societal goals, general taxpayers should be paying. The ratepayer should only be burdened with the avoided cost of building another power plant replaced by improved energy efficiency, in theory. Pete Jacobs mentioned a study which would probably be of interest to committee members. Around February or March, a SCE consultant went in and did a billing analysis on a number of SCE RQI jobs and did a pre/post analysis. It was referred to as the Evergreen Economics AMI Billing Regression Study – final report which was posted to calmac.org.

Direct link to study:

<http://www.calmac.org/startDownload.asp?Name=AMI%5FReport%5FV01%5F2%5FAppendices%5FFINAL%2Epdf&Size=3041KB>

Search at calmac.org for the three related studies which can be downloaded:

Located at: <http://www.calmac.org/results.asp?t=2>

The screenshot shows a web browser window with the URL www.calmac.org/results.asp?t=2. The page header includes the CALMAC logo and the text "Searchable Database - Results". A search bar on the left shows "Searchable Database" and a list of navigation links including "CALMAC", "CADMAC", "Toolkit", "Links, FAQ & Site Map", "EM&V Contacts & Contractors", and "Administration". The main content area displays "3 studies found matching search criteria:" and "Search Text: 'AMI billing regression study'". A "Download Search Results List" button is visible. Below this, a table of search results is shown:

Publication Type: Energy Efficiency	
Category: Process Evaluation	Author: Evergreen Econ
Sector: Residential; Commercial	Implementer: SCE
Title: AMI billing regression study	
Abstract: To explore the potential benefits of using AMI data, Southern California Edison (SCE), on behalf of SCE, PG&E, SDG&E and SoCal Gas, contracted with Evergreen Economics and SBW Consulting (the Evergreen team) to conduct an in-depth analysis using AMI data combined with additional programmatic and customer data. Using a random coefficients model, the research team was able to forecast a probabilistic load shape and compare that curve to actual usage. •SCE QI Program. The random coefficients model was very accurate in predicting load shapes, with forecasted usage within 1 percent of actual usage for a holdout sample of customers. To estimate program savings, daily load shapes were estimated for the post-participation period and then compared with actual usage over the same time period. The difference between actual and forecasted usage was used as an estimate of energy savings. For the QI program, estimated annual savings was about 7 percent of total usage. Most of the savings occurred during peak hours (as would be expected), which provided additional support the model specification. Seasonal impacts were also calculated and showed larger savings in the summer months, which provides additional support for the model and illustrates how the model can be used to adjust savings estimates for different season, rather than using a single average annual savings value, which is the current standard practice. •PG&E QM Program. The results of the QM Program analysis were similar to the QI program. The random coefficients model using QM data was very accurate in predicting load shapes, with forecasted usage also within 1 percent of actual usage for a holdout sample of customers. Program savings was estimated as the difference between forecasted and actual daily energy use in the post-participation period. Estimated QM Program savings was 3.6 percent annually. As with the QI model, most of the QM savings occurred during peak hours and during the summer months. •RBSA Data Analysis. The random coefficients model was also used to estimate the HVAC load using the RBSA dataset, as this was the only dataset available that both whole house and HVAC	

At the bottom left of the page, there is a checkbox labeled "Subscribe or Unsubscribe to CALMAC E-mail List" which is checked. The footer of the page contains the URL www.calmac.org/default.asp.



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Pete Jacobs then address AB 802. It had been signed into law the latter part of 2015 by the California legislature. The regulators were in the process of interpreting the law since then. The existing approach to baseline was still the law of the land for IOU energy claimed savings unless or until the CPUC grants an exception. Cost-effectiveness was looking solely at a program savings impact, not at customer savings. The approach to claimed savings would have to be different and take into account existing conditions analysis under an AB 802 based approach.

Additional Topics Discussion

Jeff Henning suggested a focus on advanced technologies and tools as a substitution for “hands on” verification. Chris Ganimian agreed. But, with some reservations. No amount of technology would replace eyes on the ground for gathering the factors to deliver accurate load calculations.

Chandler Von Schrader indicated that they were evaluating Proctor’s CheckMe system shortly, which would be the fifth technology their small group would then have evaluated. They had been bullish on the use of technology but it didn’t address all of the QI and verification issues. He agreed that boots on the ground probably couldn’t be completely eliminated and with Buck that verification systems wouldn’t adequately address design and sizing requirements of the standard. He decided to fault on the side of taking action to see how well contractors responded to the new technologies and how good a job they could do for homeowners. Take some time with their pilots to determine whether a standard was needed for those new verification systems. Or, let the market determine, pick its own winners.

Lori Atwater added that they also needed to thoroughly understand the gaps, what the tools could not do or not do well as well as what they could do well. What part of the verification they helped from the residential installation perspective? She could provide recommendations to her SCE Emerging Technologies group once the gaps are understood to request specific gaps they need to resolve.

What Lori wanted from the committee:

- Clear statements of what ACCA 5 and 9 required
- What industry training could get contractors to a certain point, then where did the gap in training start
- What kinds of effective marketing and outreach could make the program more attractive to a larger range of contractors

Buck Taylor offered that the committee could review a report of the new IManifold technology if one had been issued. That might have impact on parts of Standard 9. He didn’t think they would be able to identify “gaps” in the short term. He asked Lori what other topic areas would help her the most.

Lori indicated that she recalled an earlier comment that the WHPA might be able to receive an independent assessment of AB 802 and the implications the RQI program. If comments could be made in response to that assessment, she’d be happy to incorporate those thoughts in her business plan.

Buck Taylor hadn’t heard of such a document or study by or for the WHPA but would be very interested to have the committee review it, if it existed.

Pete Jacobs recalled that WHPA staff did an analysis or summary of the CPUC White Paper on AB 802.

Link to WHPA Summary of Energy Efficiency Legislation posted to the WHPA site:

<http://performancealliance.org/Portals/4/Documents/Library/WHPA%20Summary%20of%20AB%20802%20EE%20Baseline%20Policy%20Proposal%20May%2010%202016.pdf>



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(The WHPA Summary document along with the AMI Billing Regression Study Report and Assessment of Three Smart Meter Disaggregation Tools assessments report were emailed to all committee members and guests July 21.)

Bob Sundberg, WHPA staff, recalled that the WHPA document was a summary of the CPUC Energy Efficiency Baseline Policy Proposal, not an assessment of that proposal or how it might impact any RQI standards based program.

ACTION: Bob Sundberg, WHPA staff, would locate and provide copies of 1) the WHPA Summary of the CPUC baseline policy proposal document, 2) the AMI Billing Regression Study Report and 3) PG&E’s assessment study of three smart meter billing disaggregation products. **COMPLETED 7.21.16.**

Jeff Henning thought that the comparison of the ACCA standards to Title 24 code was pretty important, too.

Next Steps/Closing Comments/Adjournment

The next meeting was tentatively set for Wednesday August 17 at 10:00 to 11:30 am PDT - for 1.5-hour. Meetings were normally scheduled for the 3rd Wednesday of each month.

Tentative agenda items for the next meeting would include:

- Check for any new EC feedback on the issue of potential conflicts of interest
- Review Buck Taylor’s list of barriers/issues and organize into categories
- Prioritize the list to pick the top two to three barriers/issues to dig into

Buck Taylor adjourned the meeting at 11:40 am PDT.

* * * * *

ACTION Item summary below.

Summary of Action Items and Key Decisions (from above)

NEW 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 would be asked for their assistance.

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.

July **ACTION:** Bob Sundberg, WHPA staff, would locate and provide copies of 1) the WHPA Summary of the CPUC baseline policy proposal document, 2) the AMI Billing Regression Study Report and 3) PG&E’s assessment study of three smart meter billing disaggregation products. **COMPLETED 7.21.16.**

PREVIOUS ACTION ITEMS:

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 other implementer staff) going forward. Ongoing.



Goal 2: Residential Quality Installation Committee July 20, 2016 Meeting Draft Notes

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