



CEESP Goal 2: HVAC Energy Savings & DEER Committee
Teleconference Summary Minutes
Tuesday, September 6, 2016 (Scheduled from 11:00am – 12:00pm PDT)

Call to Order

The scheduled 60-minute meeting was called to order at 11:03 a.m. PDT by Rick Danks, Chair of the HVAC Energy Savings and DEER Committee and a representative of ASHRAE.

Roll Call

WHPA Staff announced those on the call and further confirmed attendance of the following 18 members and guests through participation reporting tools.

P = Present at meeting A = Absent from meeting; if proxy has been assigned it will be noted below. This Committee acts by consensus. Those eligible for official consensus voting (WHPA registration received and approved, plus participation at a meeting prior to the vote meeting) are grouped together. Only one representative of a member organization may cast an official consensus vote.				
Members (Voting Eligible)				
ACCA (Air Conditioning Contractors of America)	Todd	Washam	Contractor Association	P
AHRI (Air-Conditioning, Heating, and Refrigeration Institute)	Garrett	McGuire	HVAC Manufacturer Association	P
Aire Rite AC & Refrigeration	Don	Langston	Contractor (Nonresidential)	P
ASHRAE	Richard (Rick)	Danks	Engineering Society	P (Chair)
CalCERTS	Charlie	Bachand	Certifying Body	P (37 min)
CLEAResult – Only 1	Phil	Jordan	Energy Efficiency Program Consultant	P
Daikin Applied	Henry (Skip)	Ernst	HVAC Manufacturer	P
Daikin U.S. Corporation	Charles	McCrudden	HVAC Manufacturer	P
Galawish Consulting Associates	Elsia	Galawish	Energy Efficiency Program Consultant	P
Goodman Manufacturing	Aniruddh	Roy	HVAC Manufacturer	P
SCE (Southern California Edison) – Only 1	Ryan	Cho	California IOU	P
SCE (Southern California Edison) – Only 1	Sean	Gouw	California IOU	P
SMUD (Sacramento Municipal Utility District)	Bruce	Baccei	Public Owned Utility	P (6 min)
Williams Comfort	Ruth Ann	Davis	HVAC Manufacturer	P
Guests				
ACCA (Air Conditioning Contractors of America)	Barton	James+	Contractor Association	P (first 30 min)
SCE (Southern California Edison)	Andres	Fergadiotti+	California IOU	P (26 min)
WHPA Staff				
BNB Consulting (for other Committee support alignment)	Bob	Sundberg	Energy Efficiency Program Consultant	P
InfoPlast/WHPA Staff Support	Wendy	Worrell	Other Stakeholder	P (Host/Scribe)

*** Organization is Not a Member of the WHPA; + Individual is NOT Registered with the WHPA; ^(P) after last name = Member/Registrant is Pending Approval from the WHPA Executive Committee*

AGENDA

The following Agenda was distributed prior to the meeting:

1. **Roll Call** – WHPA Staff (Wendy Worrell) – 5 min
2. **Approval of Prior Meeting Minutes** – Chair (Rick Danks, ASHRAE) – 2 min
 - a. August 2, 2016
3. **Action Item Updates** – Chair (Rick Danks, ASHRAE) – 10 min
 - a. **ACTION:** ES&DEER Committee members to notify WHPA Staff (wendy@performancealliance.org) of any potential agenda topics to include for future meetings.
 - b. **ACTION:** ES&DEER Committee members to notify WHPA Staff (wendy@performancealliance.org) of any **Implementation Plan** SMART Goals they wish to focus on directly.
 - c. **ACTION:** The Chair’s update on information gained from Kevin Madison about DEER related cost effectiveness information was deferred to the next ES&DEER meeting. (IN PROCESS)
 - d. **ACTION:** The Chair to coordinate baseline webinar topic prioritization with Pete Jacobs.
 - e. **ACTION:** ES&DEER Committee members to review AB802 reference information for Committee Goal #5. (The bill addresses energy uses benchmarking and methods of claimed savings.)
 - i. [WHPA Summary of AB-802](#) - updated May 2016
 - ii. [CPUC ruling on Baseline White Paper calling for public comment on issue questions and complete White Paper - comment deadline May 17, 2016](#)



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4. **Discussion Topics** – Chair (Rick Danks, ASHRAE) – 40 min
 - a. Feasibility of Milestone Steps (particularly for Goals #2, #3, #4 from ES&DEER Committee [Implementation Plan](#))
 - b. Chair's Questions
(Resource: [Interim Work Product \(Final Draft\) – EBEE Action Plan 2017 Update Input \(Recommendations\)](#))
 - i. Given our context is the 2019 BEE (Building Energy Efficiency) Standards, which have not been developed yet; how can we determine cost effectiveness?
 - ii. Won't cost effectiveness depend on how far one must improve energy efficiency to be compliant? If so, what do we use for a starting point - current standards (2013)?
 - iii. There are some consumer segment listings in the Activation Plan. Are these sufficient?
 - iv. The nature of any incentives will impact cost effectiveness. What are your thoughts on these and how should they be addressed?
 - c. Sub-Strategy 1.5.2 Diagram
 - d. [Cost Effectiveness Matrix](#) Status
5. **Committee Next Steps** – Chair (Rick Danks, ASHRAE) – 3 min
 - a. Next Meeting: September 20 2016 from 11:00am – 12:00pm PDT
 - b. Next Agenda Topics: Re-Evaluation of the Committee's Stated Goals
6. **Adjournment** by 12:00pm PDT — Chair (Rick Danks, ASHRAE) – 10 min Chair (Rick Danks, ASHRAE)

Approval of Prior Meeting Minutes

WHPA Staff email distributed the draft August 2, 2016 meeting notes to the roster prior to the meeting.

Skip Ernst (Daikin Applied) motioned with a second from Garrett McGuire (AHRI) to approve the August 2nd meeting minutes. The motion carried with no discussion, opposition or abstention.

Action Item Updates

Updates were provided on the following outstanding action items from prior meetings.

POTENTIAL FUTURE AGENDA TOPICS

WHPA Staff reported that no content was received prior to the meeting.

IMPLEMENTATION PLAN GOAL FOCUS PREFERENCES

WHPA Staff reported that no content was received prior to the meeting.

INFORMATION GAINED FROM KEVIN MADISON ABOUT DEER RELATED COST EFFECTIVENESS INFO

The Chair reported that he and WHPA Staff have been having trouble reaching Kevin Madison. The Chair has asked for help from another Committee member.

BASELINE WEBINAR COORDINATION WITH PETE JACOBS

ACTION: WHPA Staff to schedule a meeting with the Chair and Pete Jacobs to finalize plans for the baseline webinar.

AB802 REFERENCE INFORMATION REVIEW FOR GOAL #5

The bill addresses energy uses benchmarking and methods of claimed savings. The most current reference links follow:

- [WHPA Summary of AB-802](#) - updated May 2016
- [CPUC ruling on Baseline White Paper calling for public comment on issue questions and complete White Paper - comment deadline May 17, 2016](#)

The Chair indicated that review is needed for the related White Paper goal.

ACTION: ES&DEER Committee members to review the AB802 reference material.



CEESP Goal 2: HVAC Energy Savings & DEER Committee
Teleconference Summary Minutes
Tuesday, September 6, 2016 (Scheduled from 11:00am – 12:00pm PDT)

DISCUSSION TOPICS

The Chair facilitated discussion of the discussion topics identified in the above agenda.

FEASIBILITY OF MILESTONE STEPS

(particularly for Goals #2, #3, #4 on the ES&DEER Committee [Implementation Plan](#))

The Chair reported that when he sat in on the WHPA Cross-Committee Chairs' meeting he did not feel our goals were achievable. The Chair then had email conversation with Mark Lowry about some frustrations the Chair was having about the timeline. The Chair took exception to trying to craft a white paper through the winter holiday season as he felt it would not be a priority focus for most people.

Bob Sundberg (BNB Consultants) asked if pushing the milestone requirement for WHPA Executive Committee approval back would help.

The Chair agreed that "any space" would be helpful, but expressed concern about being able to develop the stakeholder matrix in 2 hours of meeting each month. What is a representative sample in each of the segments once the Committee decides on what the appropriate segments would be? With reference to cost effectiveness in relation to AB802, he noted that it seems to revolve around consumers investing in HVAC replacement and the ability to pay for capital investment out of future reduced energy costs. He perceives that as a tough sell, especially if dealing with corporations that have to answer to stockholders.

Skip Ernst (Daikin Applied) commented that, "If they already had acceptable paybacks they would have already done them", and that "Most companies can get a better return on investment by being more efficient in their operations than by saving energy."

The Chair confirmed that to be his experience as well. He also voiced concern about trying to sell this on improved health and safety. Energy efficiency is a competing priority with health and safety. Given that there are limited funds, the Chair "struggles to find a way to sell that". His point is that "you can't make all three come true."

The Chair asked if it was premature to engage in this activity.

WHPA Staff clarified that the ES&DEER Committee has two separate tasks for Sub-Strategy:

1. Make comment as is being done to provide input to the WHPA Existing Buildings Energy Efficiency Action Plan Committee for EBEE-AP Sub-Strategy 1.5.2. This helps the EBEE Committee gain needed subject matter expert input for their development work on 2019 update pathways to implementation roadmaps. The ES&DEER Committee deliverable is in the form of meeting notes.
2. Develop a cost effectiveness matrix clarifying how, at this point, people are understanding what cost effectiveness is and what things factor into that since not all stakeholders understand it the same way. A utility definition might be different than the definition used by a distributor, manufacturer, or contractor. Understanding may be more technical for some, financial for most, or based on what is most important to them. The deliverable provides a matrix or some structure for understanding of what cost effectiveness means to the various HVAC industry stakeholders.
 - a. This is similar to what the WHPA Compliance Committee was asked to compile for an HVAC Compliance Definition.

ACTION: WHPA Staff to consolidate meeting content and distribute it as ES&DEER Committee input to the WHPA EBEE Committee for Sub-Strategy 1.5.2.



CEESP Goal 2: HVAC Energy Savings & DEER Committee
Teleconference Summary Minutes
Tuesday, September 6, 2016 (Scheduled from 11:00am – 12:00pm PDT)

COST EFFECTIVENESS DEFINITION MATRIX

The Chair questioned what an appropriate sample size would be in determining market segment definitions for cost effectiveness. How do we ensure agreement among market segment? Do we take our best shot?

Skip Ernst (Daikin Applied) suggested that each member could provide content for their organization, and perhaps for a subset of end users/customers with which they have experience. He suggested that not all will be willing to state what their personal payback and acceptable values are.

The Chair confirmed that there might be a general standard in the investment world that clarifies an appropriate measure of return on investment for a specific type of business.

Don Langston (Aire Rite) commented that his experience with end users for privately and publicly held companies is that movement in his direction occurs at the outset of the three-year mark for financial payback, but that under two years, particularly in the 1.7 to 1.5-year range for HVAC system improvements, higher efficient units, full system renovations, or a packaged approach, it is a “slam dunk”. In terms of assumptions made about rate structure, per Chair request, Don reported that for energy rates in California, which has the second highest rates beyond Hawaii and where rates will go up, he asks customers if they are aware of that information and if they understand the tiered rate structure to make sure they understand the difference between a usage charge with kWh and demand charge. He also discusses blended rates.

ACTION: For the September 20th meeting, each ES&DEER Committee member to submit their thoughts on what their own employer or customer base thinks is cost effective (or an acceptable return on investment), as well as if the single family, multi-family, commercial and public sector segments should be further broken down. The content received to be used as a pro forma base for the Cost Effectiveness Definition Matrix.

CHAIR’S QUESTIONS

(Resource: [Interim Work Product \(Final Draft\) – EBEE Action Plan 2017 Update Input \(Recommendations\)](#))

The Chair asked for input on the following questions:

1. Given our context is the 2019 BEE (Building Energy Efficiency) Standards, which have not been developed yet; how can we determine cost effectiveness?
2. Won't cost effectiveness depend on how far one must improve energy efficiency to be compliant? If so, what do we use for a starting point - current standards (2013)?
3. There are some consumer segment listings in the Activation Plan. Are these sufficient?
4. The nature of any incentives will impact cost effectiveness. What are your thoughts on these and how should they be addressed?

The Chair asked if being close to 2019 efficiency standards would someone really want to make the low percentage improvements versus someone who has an old system and could reap significant efficiency benefits.

Skip Ernst (Daikin Applied) commented that it is very difficult to replace equipment until it becomes a maintenance issue as it is not deemed cost effective. He reported that they are compliant if it is existing equipment.

The Chair got the impression that with AB802 you had to comply with the new standards.

Skip Ernst (Daikin Applied) was unaware of a requirement to replace older equipment with newer equipment just because it is more efficient. He acknowledged that green consciousness and future savings in operating costs help customers do it a little sooner and budget for that pending major expense.

The Chair was looking at it from a different perspective and appreciated the clarification.



CEESP Goal 2: HVAC Energy Savings & DEER Committee
Teleconference Summary Minutes
Tuesday, September 6, 2016 (Scheduled from 11:00am – 12:00pm PDT)

The Chair commented that there is apparently incentive money through the Investor Owned Utilities (IOUs) to encourage people to “get with a more modern maintenance program”, but that he did not see where California offered capital expense to encourage purchase of more efficient assets.

Don Langston (Aire Rite) answered that for PG&E, SDG&E, and SCE, the maintenance program, modeled in theory after Standard 180, was an attempt to bring equipment up to “baseline” level of performance. There was seed money to help customers get to that level, but it was for small things including coil cleaning, etcetera. When it comes to the actual equipment, if there is a dead compressor, etcetera, the unit cannot be enrolled in the program. SCE had a pilot program that is currently on hold for various unknown reasons. If the unit ran and all the refrigeration components were operational, there was some incentive money to replace the equipment. It had some good success.

Don Langston (Aire Rite) clarified that funds are not taxpayer dollars but rather ratepayer dollars that are applied through public purpose programs from residential and nonresidential customers. All the money is collected under the California Public Utility Commission (CPUC) then distributed to the IOUs for use in programs to help improve energy efficiency. It can cover insulation to air quality windows to a variety of other areas beyond HVAC.

Bob Sundberg (BNB Consulting) noted that the IOUs have to perform efforts to write energy savings work papers in attempts to justify the claim for savings in order to get the funding. They then need to support that through programs and research that the CPUC evaluates. It is a struggle to get the funds from what he has heard others describe.

Don Langston (Aire Rite) agreed that there are a lot of steps to be done within the HVAC portfolio buckets before the incentive/rebate funds are released.

The Chair asked about the differences in IOU incentives and the AB802 advertised incentives.

Don Langston (Aire Rite) reported his opinion that AB802 and SB350 are looking for alternative ways outside of Title 24 in the Green Code to jumpstart energy efficiency because “they are behind their goals for being able to have net zero ready buildings by 2020 and 2030 for residential and nonresidential”. The IOUs are presently trying to determine what to do for to operationalize the bills. Don is working on a project with SDG&E for how to approach the DR component and energy efficiency”. They are parallel paths that will most likely have alignment eventually.

Bob Sundberg (BNB Consulting) reported that most of the existing IOU programs have been based on deemed savings or claims against what DEER already has for individual energy measure potential savings with assumptions based on location, degree of technician capability for fulfillment, etcetera. The difference that he saw with AB802 is that the basis for start is from the meter from the building versus from a collection of energy efficiency measures. CPUC already drafted its proposed guidance with those discounts and concerns about ways to reduce claims of savings because of many variables involved. An IOU task/challenge to support claimed savings based on meter is a different pathway, but is based on some energy use of the whole building. It is a different pathway but with the same challenges as was had previously.

Per the Chair’s inquiry, Bob Sundberg (BNB Consulting) confirmed that the DOE Energy Star benchmarking section is not similar to what new systems are. He clarified that if research is not done in California under guidance of the CPUC, there is a great tendency to discount what the energy sources are. He gave the example of work submitted by the WHPA RQI Committee that was either discounted or ignored. He reported that this same sentiment has been expressed by a number of Committee members from both the residential and commercial sides.

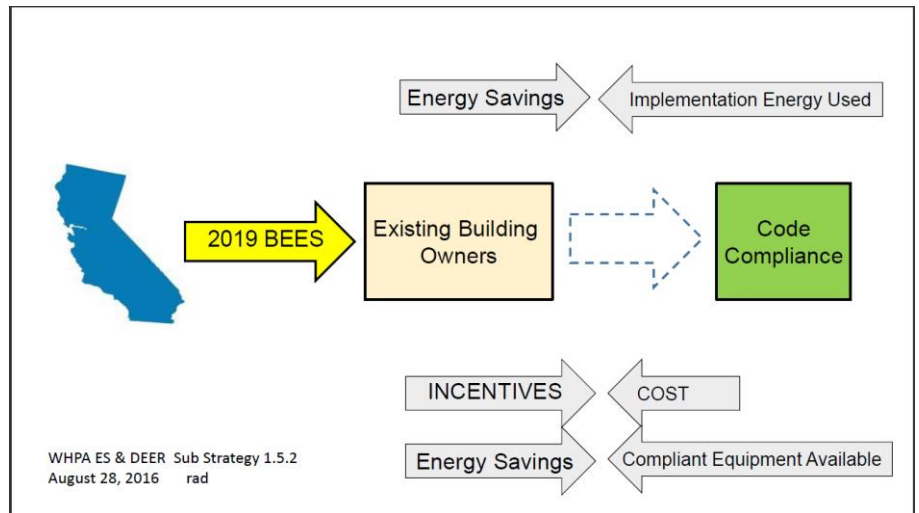
Don Langston (Aire Rite) commented that modeling through DEER makes a lot of assumptions. He expressed that the bottom line is that doing field measurements or looking at other established industry sources through ASHRAE and

other organizations seem to lose their way through the maze as they go to Sacramento. This is his opinion “looking through a keyhole”.

SUB-STRATEGY 1.5.2 DIAGRAM

The Chair overviewed the following Sub-Strategy 1.5.2 Diagram that he developed.

- The blue California graphic represents building energy efficiency standard content from CEC and other governmental agencies being imposed on existing building owners. The arrows above and below are forcing functions. Those going left to right encourage compliance with the energy standards. Those going right to left are viewed as impeding issues. The overall purpose was to get building owners through the dotted arrow on a path toward code compliance.



- The enforcing functions are not entirely complete, but is a start.
- In looking at guidance back to the governing bodies and regulators, it struck the Chair that to account for enforcement and training, unless it is known how much energy it might take to get appropriate training and infrastructure in place, it might be a “zero sum game”. While that is beyond the ES&DEER Committee’s scope, he felt it was something someone should consider.
- It was unclear to the Chair on whether or not equipment will be available within the 2019 Standards that will support being compliant at least at the meter.
- As always, incentives versus costs are returning drivers in return on investment.

ACTION: ES&DEER Committee members to submit their comments and notations on the Sub-Strategy 1.5.2 Diagram (used as a basis of a flowchart to help the HVAC industry navigate the focus) to WHPA Staff (wendy@performancealliance.org) for discussion at the September 20th ES&DEER Committee meeting.

Skip Ernst (Daikin Applied) commented that if the inquiry was about Federal Requirements for Unitary Equipment, there is already equipment that applies. He noted that there are other regulations, but that is the one in which he was most familiar.

The Chair reported that prior meeting discussion referenced different efficiency standards for IEER.

Skip Ernst (Daikin Applied) confirmed that IEER is commercial 6 ton and larger, which will be a Federal regulation in 2018 or 2019, and that there is compliant equipment that meets that requirement.

The Chair acknowledged that availability of systems to meet the energy savings is not an issue.

Don Langston (Aire Rite) commented that he likes the visual as a starting point, but would add a challenge on the right side for the bad assumption made that equipment put in previously was code compliant with a permit. He suggested adding a section under the “Code Compliance” box for “Assumption that Code Based”, reminding that the code compliance rate has been verified as very low presently.



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The Chair confirmed that he will take Don Langston's comments into consideration.

The Chair confirmed that the project will be generic categories but not ...

Committee Next Steps

The Chair reported that the next ES&DEER Committee meeting is Tuesday, September 20, 2016 from 11:00am – 12:00pm PDT. The next agenda is expected to include re-evaluation of the Committee's stated goals and review of received pro forma Cost Effectiveness stakeholder content, plus input on the Sub-Strategy 1.5.2 diagram.

The Chair adjourned the meeting at 12:05 p.m. PDT.

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Outstanding Action Items and Key Decisions (from ABOVE and Prior Meetings)

- **ACTION:** WHPA Staff to schedule a meeting with the Chair and Pete Jacobs to finalize plans for the baseline webinar. (IN PROCESS)
- **ACTION:** ES&DEER Committee members to review the AB802 reference material.
- **ACTION:** WHPA Staff to consolidate meeting content and distribute it as ES&DEER Committee input to the WHPA EBEE Committee for Sub-Strategy 1.5.2. (DONE)
- **ACTION:** ES&DEER Committee members to submit their comments and notations on the Sub-Strategy 1.5.2 Diagram (used as a basis of a flowchart to help the HVAC industry navigate the focus) to WHPA Staff (wendy@performancealliance.org) for discussion at the September 20th ES&DEER Committee meeting.
- **ACTION:** For the September 20th meeting, each ES&DEER Committee member to submit their thoughts on what their own employer may think about what is cost effective, as well as any intel on customer base as appropriate.

CONTINUED FROM PRIOR MEETINGS

- **ACTION:** The Chair to contact Kevin Madison to gain DEER related cost effectiveness information and report back to the ES&DEER Committee. (IN PROCESS)