



WHPA Annual In-Person Leadership Meeting Day #1 – November 17, 2016

This meeting was held at the Hilton Pasadena in Pasadena, California. It was the first day of the two-day WHPA Annual In-Person Leadership Meeting of the WHPA Executive Committee, Council of Advisors, Committee and Working Group Chairs, and Guests.

Call to Order

Carmen Best (CPUC) opened the meeting at 8:45 a.m. PST.

Attendance

Organization	First	Last	WHPA Category	Participated as...	11/17	11/18	WHPA Member Org
ACCA	Don	Langston	Contractor Association	EC, COA, Chair, & Proxy for HARDI	x	x	x
ACCA	Louis	Fuentes	Contractor Association	Guest	x	x	x
AHRI	Garrett	McGuire	HVAC Manufacturer Association	EC & COA Proxy for NATE	x	x	x
ASHRAE	Rick	Danks	Engineering Society	Chair	x	x	x
ASHRAE	Ron	Jarnagin	Engineering Society	EC & COA	x	x	x
BMI	Pete	Jacobs	Energy Efficiency Program Consults	Chair	x	x	x
Cal SMACNA	Chris	Walker	Contractor Association	COA	x	x	x
Cal SMACNA-Natl.	Mark	Terzigni	Contractor Association	Guest	x	x	x
CalCERTS, Inc.	Charlie	Bachand	Certifying Body	Guest	x		x
CCCCO	Jim	Caldwell	Educator, Trainer	COA	x	x	x
CEC	Andrew, Commissioner	McAllister	Government (Other than CPUC)	Speaker	x		x
CEC	Eddie	Rosales	Government (Other than CPUC)	Guest		x	x
CEC	Martha	Brook	Government (Other than CPUC)	Speaker	x		x
Charles F. Segerstrom, EE Consultant	Charles	Segerstrom	Energy Efficiency Program Consultant	Guest	x	x	x
CHF-CIRB	Allison	Paul	Research Organization	Chair	x	x	x
CPUC	Carmen	Best	CPUC	EC & COA	x	x	x
DEO	Irene	Marien	Other Stakeholder	Guest	x	x	x
DEO	Kellye	Johnson	Other Stakeholder	Guest	x	x	x
DEO	Mel	Johnson	Other Stakeholder	Chair	x	x	x
FDSI	Dale	Rossi	Third Party Quality Assurance Provider	Chair	x	x	x
HARDI	Talbot	Gee	Distributor Association	EC & COA	x	x	x
Honeywell E&ES	Mike	Lawing	Controls (Manufacturer or Distributor)	Guest	x	x	x
HVAC Excellence	Eugene	Silberstein	Certifying Body	COA	x	x	x
HVACRedu.com	Chris	Compton	Educator, Trainer	Chair	x	x	x
IHACI	Bob	Wiseman	Contractor Association	EC & COA	x		x
JCEEP	David	Dias	Organized Labor	EC & COA	x	x	x
NCI	Dominick	Guarino	Educator, Trainer	EC & COA	x	x	x
NCI	Rob	Falke	Educator, Trainer	Chair & EC Proxy for NCI	x	x	x
NRDC	Lara	Ettenson	Energy Efficiency Organization	Speaker	x		



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PG&E	Jeanne	Duvall	California IOU	EC & COA	x	x	x
PG&E	Adam	Scheer	California IOU	Guest	x		x
PG&E	Chris	Kato	California IOU	Guest	x	x	x
PG&E	Chris	Weber	California IOU	COA	x	x	x
PG&E	Swapna	Nigalye	California IOU	Guest	x	x	x
Roltay	Buck	Taylor	Other Stakeholder	Chair	x	x	x
SCE	Dario	Moreno	California IOU	Guest	x		x
SCE	Derek	Okada	California IOU	Guest	x		x
SCE	Jack	Shih	California IOU	Guest	x	x	x
SCE	Jake	Huttner	California IOU	Chair	x		x
SCE	Lori	Atwater	California IOU	Guest	x	x	x
SCE	Matt	Horwitz	California IOU	COA	x	x	x
SCE	Scott	Higa	California IOU	COA	x	x	x
SCE	Sean	Gouw	California IOU	Chair	x	x	x
SDG&E	Jeremy	Reefe	California IOU	EC & COA	x	x	x
SDG&E	Brandi	Turner	California IOU	Guest	x	x	x
SDG&E	Michelle	Costello	California IOU	Guest	x	x	x
SMUD	Ravi	Patel	Public Owned Utility	COA	x	x	x
SoCalGas	Carlos	Ruiz	California IOU	Guest	x		x
SoCalGas	Harvey	Bringas	California IOU	EC & COA	x	x	x
SoCalGas	Gary D.	Johnson	California IOU	COA		x	x
SoCalGas	Peter	Tanios	California IOU	Guest	x	x	x
SynergyNexGen	Barbara	Hernesman	Energy Efficiency Program Consultant	Chair	x	x	x
Tre'Laine Associates	Pepper	Hunziker	Energy Efficiency Program Consultant	Chair	x	x	x
UA	Don	Tanaka	Organized Labor	EC & COA		x	x
WHPA Staff							
BBI	Mark	Lowry	Energy Efficiency Program Consultant	Staff	x	x	x
BJGustavson Consulting	Bonnie	Gustavson	Other Stakeholder	Staff	x	x	x
BNB Consulting	Bob	Sundberg	Energy Efficiency Program Consultant	Staff	x	x	x
CLEAResult	Paul	Kyllo	Energy Efficiency Program Consultant	Staff	x	x	x
Galawish Consulting Associates	Elsia	Galawish	Energy Efficiency Program Consultant	Staff	x	x	x
InfoPlast	Wendy	Worrell	Other Stakeholder	Staff	x	x	x
Key Marketing Group	Judy	Johnson	Other Stakeholder	Staff	x	x	x
Empowered Solutions	Shea	Dibble	Energy Efficiency Organization	Staff	x	x	x
Opinion Dynamics	Ellen	Steiner	Energy Efficiency Program Consultant	Staff	x	x	x

To avoid repetition, the abbreviation for the name of the member organization will be used in the body of the minutes.

Agenda

Topic	Discussion Leader
Registration, Breakfast, and Networking	
Welcome	Carmen Best, CPUC
Leadership Recognition	Mark Lowry, BBI COO
EC Call to Order, COA Call to Order, Introduction, Meeting Purpose, Agenda Review	Jeanne Duvall and Ron Jarnagin, EC Co-Chairs, and Dominick Guarino, COA Chair
CA Regulatory Legislative Landscape Review and Select Regulatory Updates (e.g. AB 802, SB 350, SB 1414)	Carmen Best, CPUC, and Martha Brook, CEC
Commissioner McAllister	Andrew McAllister, Commissioner CEC
Business Plan/Implementation Plan Timelines/CAEECC Future	Lara Ettenson, NRDC
EBEE HVAC Action Plan	Martha Brook, CEC
EBEE Breakout Sessions	Barbara Hernesman, EBEE Co-Chair
Breakout Session Report-Out	Barbara Hernesman, EBEE Co-Chair
Recap and Next Steps – Setting the Stage for Day #2	Jeanne Duvall and Ron Jarnagin, EC Co-Chairs, and Dominick Guarino, COA Chair

Welcome

COMMENTS by Carmen Best (CPUC) – Carmen is the Energy Efficiency Commercial Programs & Evaluation Supervisor at the California Public Utility Commission. She welcomed the attendees to the two-day meeting.

These two days will provide additional opportunities to add your voice to how the WHPA works. I wanted to step back and put this meeting in context and share my perspective on the issue of energy efficiency. EE presents unique challenges. I want you to pat yourself on the back for taking it on. There is no silver bullet. It means complying with regulations, making regulations, modeling and measuring performance, sharing best practices with your peers and maybe with your competitors, and ultimately it means making energy efficiency available to customers who are dealing with other things. So it is messy. Ultimately, energy use in general, and HVAC use in particular, is invisible to most people. Energy resources are expected to come from outside conventional forms. This propels a need for energy management and it's becoming an essential skill. It is still to be determined if this skill is expected to be for customers or by customers. Who will fill that skill gap? The WHPA has ideas on how they can contribute. In these two days, I encourage you to remember this bigger context and the value it has to you, the customers, the economy, and the world. Over the past year, you have shown up in many forums and you have participated with thoughtful comments. Thank you for your time and your continued engagement.

Leadership Recognition

COMMENTS by Mark Lowry (BBI) – Dale Gustavson was the spiritual founder of the WHPA. He personally recruited many of you in this room into the WHPA. Dale has taken a step back for health reasons, and we want to recognize Dale's contributions today.

Dale's company Better Buildings Inc. had five core strategies:

1. Include a wide spectrum of stakeholders, from HVAC contractors to energy management professionals.
2. Identify, motivate, and train qualified building owners to purchase energy efficiency products and services at minimum risk.
3. Assist policymakers, state and federal agencies, and utilities by facilitating the creation of a sustainable market-driven energy efficiency infrastructure, particularly as it pertains to HVACR.

4. Encourage HVAC manufacturers and distributors to use their marketing clout to create a higher perceived market value for quality-focused HVAC contractors.
5. Advocate for energy efficiency at every opportunity.

COMMENT by Ellen Steiner (Staff) – We are developing a digital tribute book for Dale Gustavson—photographs and stories—that we will send him around the holiday time. **ACTION** by meeting attendees: If you have not sent your stories and/or photos regarding your experiences with Dale Gustavson, please send them to Ellen Steiner (esteiner@opiniondynamics.com) by Friday, November 25.

EC and COA Call to Order, Introduction, Agenda

Scribe noted that there was a full representation of the EC and COA, therefore no verbal roll call was required.

CALL TO ORDER of the WHPA Council of Advisors (COA) by Dominick Guarino (NCI), Chair of the Council of Advisors. I call the COA to order. There will be a packed agenda for these two days.

I want to speak about a COA SMART Goal that has evolved into a significant project and will be a key part of the Day #2 agenda. It is to look at the gaps between regulators, the IOUs, and industry. Each of these stakeholders is impacted by the CLTEESP as well as recent legislative actions. As we go into this new cycle of legislation, it is more important than ever that we identify and help close some of the gaps between these three stakeholder groups.

The breakout sessions tomorrow are intended to be a launching point to increase understanding:

- When regulators understand what the contactors and IOUs face every day, they can make better programs.
- When IOUs understand what is working within the IOU programs and where contractors and other industry members can still operate profitable businesses, then those programs will work better.
- When the entire delivery chain—from manufacturing through delivery to contractors—understands and has a say in shaping IOU and other programs, then those in the delivery chain will be able to more successfully deliver energy efficiency to their customers.

All this has to start with an honest and open dialog to understand what the other stakeholders have to deal with. We want to create win-win solutions for all, starting and ending with the ratepayers. The ratepayers are ultimately the decision makers—nothing happens until somebody buys something. Mel Johnson of DEO has agreed to chair the Gaps Analysis Working Group. We hope some of you are interested in joining that Working Group.

COMMENTS by Ron Jarnagin (ASHRAE) – From ASHRAE’s perspective, we appreciate what is going on here and we like the opportunity to be involved. However, I urge WHPA to think bigger than just California. I recognize that this is for California, but what you do here can reach much further and can be expanded to be used in other places.

CALL TO ORDER of the WHPA Executive Committee (EC) by Jeanne Duvall (PG&E), Co-Chair of the Executive Committee, responsible for commercial HVAC for PG&E.

In these two days, I think we will come to a place where potentially small teams will help answer questions that the IOUs have regarding program implementation. This meeting will start to give the industry more of a voice in the IOU programs and let the regulatory commission and the CEC see what is going on in the market. On Day #2, we will look at the gaps and then at how we make the best use of every volunteer in the WHPA.

CA Regulatory Legislative Landscape Review and Select Regulatory Updates – Presentations posted on WHPA website

PRESENTATION by Carmen Best (CPUC) of the California Legislative Landscape – The CPUC Proceedings consider issues of measurement to scope out energy needs for the whole state long term:

- **Integrated Distributed Energy Resources (IDER)**
 - Framework based on the entire energy production and delivery system from the customer side to the utility side including localized incentives.
- **Distributed Resource Plans (DRP)**
 - Information on grid constraints will help assess value of resources.
 - Scope includes value of distributed energy resources to customers.
- **Load Forecasting and Long-Term Procurement Planning**

SB 350 has a big component for disadvantaged communities:

- Low Income Barriers Study will recommend how to increase access to efficiency investments – by January 2017.

AB 802:

- Large commercial and multi-family data access, benchmarking, and public disclosure.
- Data aggregation program including requiring the IOUs to provide aggregated data on the whole building unit to the building owner. This is the first state program in the nation in terms of required public disclosure.
 - Whole building data access for building owners.
 - First statewide benchmarking and public disclosure program.
 - Rulemaking will begin December 2016.
 - Benchmarking program will launch around spring 2018.
- Reinforces the CEC authority to collect customer-level data to improve forecasting and efficiency savings attribution.
 - Title 20 data collection rulemaking will begin early in 2017.

SB 1414 – Plan to improve compliance with AC & HP code requirements. The CEC is leveraging the work of the WHPA over the past year. The WHPA probably told us everything that we have summarized as our response to this new legislation.

- CEC will collaborate with CSLB, building officials, and stakeholders. We need to reduce the cost of compliance and the stack of papers.
- Plan must consider impacts on all stakeholders.
- Plan must be feasible and achievable at reasonable costs to government, industry, and property owners.
- Plan due January 2019.

QUESTION by Lori Atwater (SCE) – Regarding SB 1414, what do you mean when you say the timeframe for your plan is January 2019? Will there be other requirements in the interim?

RESPONSE by Martha Brook (CEC) – The legislation gave a January 2019 deadline to complete the plan. Currently the CEC does not have resource working on the plan. We will begin work on it the second half of 2017 and will need to finish by mid-year 2018, working with the IOUs.

RESPONSE by Carmen Best (CPUC) – The short answer is that all energy efficiency programs need to be in compliance with existing laws. I know that presents challenges and we do not yet have a solution, but we are looking for solutions to make it meaningful.

QUESTION by Lori Atwater (SCE) to Martha Brook (CEC) and Carmen Best (CPUC) – Yesterday at IHACI, I was advocating engagement by residential contractors (in policy discussions). The industry wrestles with what CPUC and CEC do. Can you explain the difference between the CPUC Energy Division and the CEC (so that residential contractors can understand it)?

RESPONSE by Martha Brook (CEC) – The Energy Commission sets energy efficiency standards and building efficiency standards. We are a regulatory agency but we don't regulate the IOUs in terms of programs.

RESPONSE by Carmen Best (CPUC) – The CPUC is a constitutional regulatory body that was set up to regulate monopolies in California, which the IOUs are. The CPUC Energy Division (ED) is focused on the energy components—which goes all the way from grid regulations to ensuring that the lights stay on to ensuring that rates stay low—and that we meet the energy goals that come down to us. For example, the CPUC might mandate the IOUs to enforce CEC standards.

QUESTION from Pete Jacobs (BMI) – Looking at the big wedge in the chart that Martha Brook showed (see above chart) for doubling savings, how much do you imagine will be private capital?

RESPONSE by Martha Brook (CEC) – We are saying \$10B private capital investment in the state's energy efficiency plan, but we are not likely to assign the wedge to private capital.

QUESTION by Mel Johnson (DEO) – Will there be a lot of work to inform each of the wedges?

RESPONSE by Martha Brook (CEC) – I think you are saying that we are going to be asking for data from organizations that we have not asked data from in the past—for instance, air districts, transportation districts. That is an excellent question. We were asked to think carefully and thoughtfully about the outreach.

QUESTION by Charles Segerstrom (EE Consultant) to Martha Brook (CEC) – When I look at the wedges, where are the demand reduction goals?



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RESPONSE by Martha Brook (CEC) – Good question, but I don't have the answer. The CEC is now establishing the framework for how we implement AB 350. We still need to figure out how we track the demand component. We do not have an answer.

RESPONSE by Carmen Best (CPUC) – For the utility goals, we have kilowatt goal reductions.

QUESTION by Jeremy Reeve (SDG&E) – How do you align the two plans—California Long Term Energy Efficiency Strategic Plan (CLTEESP) and AB 350—and what is your vision of what that looks like?

RESPONSE by Martha Brook (CEC) – From the Existing Buildings Energy Efficiency (EBEE) Action Plan perspective, we didn't explicitly link our strategies from the CLTEESP, but I do not think they are divergent. Some of them have an aspirational part and we still have Zero Net Energy (ZNE). In my opinion, the updating of the CLTEESP is uncertain.

RESPONSE by Carmen Best (CPUC) – I agree that the updating of the CLTEESP is uncertain. The CLTEESP has demonstrated that it still has standing for bringing people together around these common issues. With the EE proceeding tackling market transformation again, a revision for the CLTEESP will probably follow that because it is tied to market transformation. The EBEE Action Plan and the CLTEESP are different levels of detail and strategy, but they are not divergent.

COMMENT by Commissioner Andrew McAllister (CEC) – There is a reason why the EBEE Action Plan was formatted as it was. We wanted to engage a lot of different stakeholders and we came from a different process. The CLTEESP originally had a conversation back in 2005, and there has been a lot of water under the bridge in last 8 to 10 years. It makes sense that the EBEE does not look exactly like the earlier Strategic Plan. They have the same DNA, and if they are out of synch, that is a function of the timing and the process. With EB (Existing Buildings), we created an acronym that actually has traction.

COMMENT by Louis Fuentes (ACCA) – I am assuming the ACCA responsibilities for Don Langston in the WHPA next year, and I am a contractor from the Imperial Valley. Do the authors of these bills just think up this stuff and tell you to go get it done? Has the CPUC or the CEC written out anything for the homeowner that maps out a plan for how you can hit energy efficiency benchmarks as you implement things for your home (one at a time); for example, if you install a high efficiency AC that is correctly sized or solar or a new water heater or new lighting? Has anything been developed that we contractors can show to consumers as a roadmap?

RESPONSE by Carmen Best (CPUC) – There is a process of review and thought as legislation is being proposed. Sometimes the CPUC Commissioners take a neutral stand, sometimes pro, sometimes con. We have legislative offices that handle that interaction. The legislature is typically planning off the broader goals that the governor sets.

COMMENT by Martha Brook (CEC) – The CEC also sees proposed legislation and has an assessment and impact statement. Sometimes we help the sponsors with information during the drafting stage. There are also asset rating models with the idea that we are trying to value the energy-related assessments of commercial and residential property. That information could be provided to homeowners and building owners. There is one paradigm on which we need to do outreach—**with energy, bigger is not better!** We are planning to do a revisit to the homeowner energy program in the next two years. We won't need a full asset rating before we can work to design that roadmap.

COMMENT by Carmen Best (CPUC) – Energy portfolio manager is a bare bones tool to understand, and there is an integrated audit tool. This is statewide marketing education and outreach focus.

COMMENT by Martha Brook (CEC) – The plan is to engage consumers with incentives and to build long-term relationships so that consumers have an energy efficiency coach to help them plan their investment.

COMMENT by Carmen Best (CPUC) – There is a “strategic energy management program” model which has a long-term engagement strategy, is focused on O&M and upgrades, is being developed for the commercial world, and has robust EM&V with baselines up front.

QUESTION by Ravi Patel (SMUD) – I want to reiterate the need to tie this back to the consumer. At SMUD we have EE goals. Are we to work with companies like Zillow to get the asset rates that customers are accustomed to using?

RESPONSE by Martha Brook (CEC) – We have been working to “green the MLS” and to add fields, design data, and provide information infrastructure to automate the population for MLS fields over time. I heard a concern from the California Association of Realtors that the data needs to be verified. You know, it's all about the quality of the installation; SEER 13 is not always SEER 13. We don't want to get the market excited and don't want to mislead them. The asset rating approach, if it is done right, could be valued by consumers. We are working on it.



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QUESTION by Rob Falke (NCI) – I spend time with the contractor community. Bringing it back to 1414, there is a conscious decision by the homeowner not to participate in the permitting process because there is no value to the homeowner. Even the WHPA shields the CEC and the CPUC from that reality. We are so distant from the reality of the contractors in front of the consumer and the customer at the kitchen table that these things will never come to pass. That is what needs to be heard.

QUESTION by Carmen Best (CPUC) – Does the WHPA have an arm that is tracking legislation that is coming down? 1414 was a legislative decision not a CPUC decision. Does the WHPA provide input in advance of legislation?

RESPONSE by Shea Dibble (Staff) – No. Maybe the WHPA should be part of a stakeholder group (to provide input to proposed legislation).

COMMENT by Jeanne Duvall (PG&E) – The IOUs knew that 1414 would shut down the upstream programs, so we got the language changed to exclude the upstream program. We IOUs need industry to give their voices in advance of legislation.

COMMENT by Chris Walker (Cal SMACNA) – SMACNA supported 1414 because we see a lot of ratepayer money going out for ratepayer programs where permits are being pulled, but then there is no final inspection by local building departments to be sure equipment was installed properly. 1414 was a good step from our contractors' perspective; however, we demand that there be a third-party building official to make sure the investment of the ratepayer was done properly.

COMMENT by Buck Taylor (Roltay) – We need to be very careful how we are spending ratepayer dollars. As chair of the RQI Committee, I have to state that permits do not result in energy efficiency. If our Committee knew about this bill, we would have opposed it. I train code officials, and they are not in a position to determine the integrity of duct systems. They rely on third parties or the work of the contractor.

Commissioner Andrew McAllister of the CEC – Presentation posted on WHPA website

PRESENTATION by Andrew McAllister, PhD, Commissioner CEC – **The Transition to Clean, Low-Impact Energy Systems: The California Experience** (Commissioner McAllister fills the economist position as a Commissioner of the CEC).

I see the WHPA as one of my frontline stakeholders in helping Governor Jerry Brown and me achieve the state's goals. We have a common set of goals. Where your beliefs differ from what the CEC is doing is what I need to hear about.

The plan for AB 758 was adopted in September 2015. The update is likely to be adopted at the December 2016 business meeting, and Martha Brook is leading that. Each update will update the current reality and learn from what has happened in the past.

In Governor Jerry Brown's January 2015 State of the State address, he wanted to highlight energy efficiency, so he stated a goal of "doubling EE." The Governor's statements and executive orders carry a lot of weight, and the legislature wanted to put this goal into the statute of SB 350. We took this as our top line policy goal, so now the CEC needs to make this goal happen. Existing buildings is where it's at or we will not meet our goals.

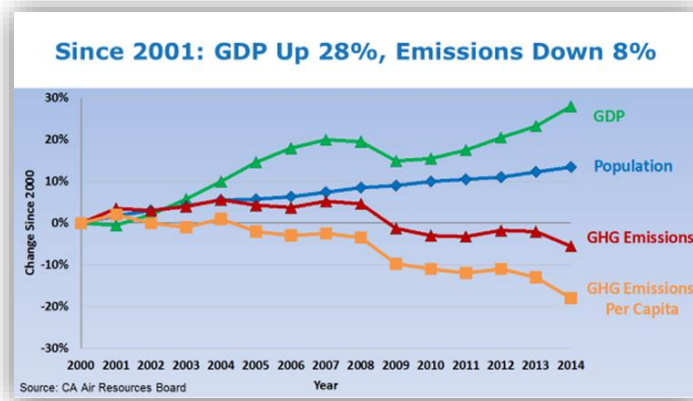
With the results of the presidential election, the federal Department of Energy will try to maintain their funding post-election; but California, working with a few other states, will be more responsible than we were (prior to the election results) and be a (national) leader in energy efficiency. California has a special role because we are a large state and sometimes have unique authority allowed by the federal government. In California, we have many tools in our tool box, a population that supports green energy, and a governor who is a lifetime green advocate. I am on the board of NASEO, the National Association of State Energy Officials, and they are looking to California for leadership.

The integrity of our building stock starts with energy efficiency. Energy efficiency will be the focus on state policy. We are building great tools to (1) improve our forecasting and (2) measure the baseline so that we can see the impact of programs. The state legislature has asked us to disaggregate the wedges (in the SB 350 wedge chart shown by Martha Brook). We are building the tools to do that, hopefully automated.

Permitting requires a robust discussion with local government. The CEC has an \$8M-\$10M "local government challenge" program in which we are inviting local governments to provide their good ideas on how to get benchmarking incorporated. The local governments are the creative ones on this, such as how to streamline permitting. We need to reduce the stack of paper associated with permitting. We also have a robust conversation going on with CALBO (California Building Officials). Question is: Where are the opportunities to streamline and lower the cost of that whole process?

The utility ratepayer programs have been the primary platform for getting the energy efficiency programs moving forward, but market transformation happens when energy efficiency is in the culture. My goal here is to invite you to keep contact with the CEC. We have to keep convening knowledgeable people who can give us a reality check. Keeping it real is something that the WHPA needs to help us do because it does not naturally occur in a state agency.

We have a governor and other leadership that is committed to this climate change imperative. The Under2MOU (<http://under2mou.org>) is an expression of Governor Brown's to get under 2 metric tons (MT) per capita emission by 2050. California is currently at 13.3 MT. The work will happen at the sub-national level. We can wean ourselves from fossil fuels, and there are cost-effective ways to do this.



If we include Hydro, we are already at 50% sourced from renewable energy. If you add electricity from nuclear, which is non-carbon, then the percentage of California electricity from renewable energy is even higher. Reducing the use of fossil fuel by half did not make it into SB 350, but it is a policy goal. California is funding a lot of charging infrastructure for vehicles. There is a lot of private capital looking for a place to go, and there are lots of cost-effective places for capital to go. We need to facilitate that. Certainly, the state will not fund all these projects.

Energy efficiency products have gotten better and the costs have gone way down. So people can say—*not only am I doing the right thing, reducing my carbon footprint, but it is a better product. The lighting product is good; I screw it in and I never have to worry about it again.* They are getting there with color quality and form factors of LED lighting. We need to figure out how to replicate the (success of) the LED story across other parts of energy efficiency.

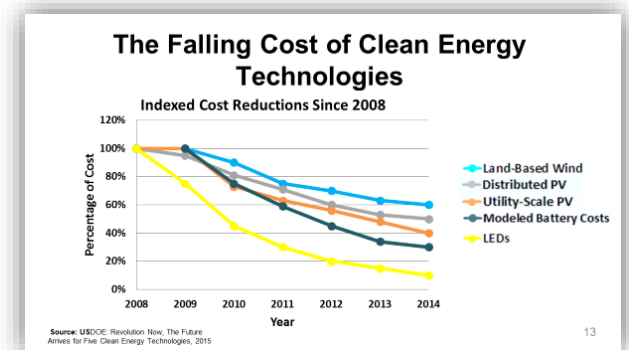
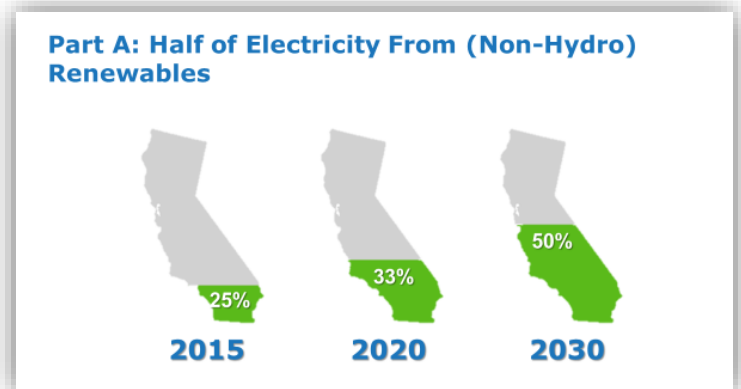
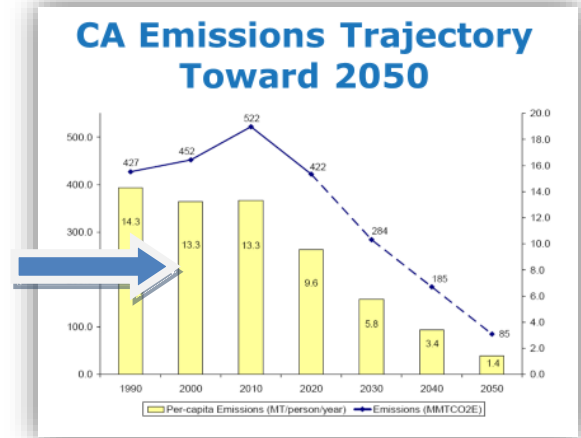
There are almost 600,000 rooftop solar homes in California. We need to do the same kind (of energy savings) for HVAC and other technologies. There is no one silver bullet, and a lot of collaboration is needed.

How will we do it?

- Quality installations
- Retro-commissioning
- Deep retrofit

What do we need?

- Government leadership
- Data
- Workforce alignment
- Measured savings
- DER markets





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COMMENT by Don Langston (ACCA) – The HVAC industry is fractured because so much is solely about sales tools for contractors to help business owners understand how their building is performing. Many of the building owners and facility managers I deal with don't even look at their energy bills. We show them how much they are spending for energy—sometimes \$1M-\$2M a year—and they don't know that until we show them. Then when we say that they can save 10% of that by improved energy efficiency programs (from HVAC), they start to listen.

COMMENT by Commissioner McAllister (CEC) – **The California Clean Energy Jobs Act (Prop 39 K-12 program)** – When the schools apply for the grant funds, they accept that the CEC will get their energy consumption data. So now we have the first set of data. SB 350 calls out Prop 39 as part of the data collection. However, the Energy Division is not the place to put together the total value proposition for the energy efficiency investment. This is a broad discussion and is really a real estate discussion. There is a case study report by Kevin Bates of Sharp Development Company (for PG&E) on the total value of investing in energy efficiency.

COMMENT by Dale Rossi (FDSI) – Commissioner McAllister, you talk about the difficulty of collecting data, but my company is in energy analytics and diagnostics, and we make our living providing (HVAC EE) data to people. People understand dollars.

COMMENT by Commissioner McAllister (CEC) – We need to be better at understanding all the co-benefits of EE programs for residential, such as sound mitigation and indoor air quality, and not lay all of the (investment burden) on EE.

COMMENT by Jeremy Reeve (SDG&E) – In the near future, HVAC may go up in the priority of IOU programs.

Business Plan/Implementation Plan Timelines/CAEECC – Presentation posted on WHPA website

Scribe notes that the California Energy Efficiency Coordinating Committee (CAEECC) and its subcommittees were authorized by California Public Utilities Commission (CPUC) Decision 15-10-028. This forum is the venue by which stakeholders can provide input into the development of the IOU Program Administrators' Energy Efficiency Business Plans, Implementation Plans, and related matters that are central to Energy Efficiency portfolios approved by the CPUC. The National Resources Defense Council (NRDC) administers CAEECC.

PRESENTATION by Lara Ettenson (NRDC) – CAEECC was formed after joint recommendations from TURN, the IOUs, the NRDC, and other stakeholders. CAEECC tracks all the input including any input submitted by WHPA members through the WHPA.

The WHPA and its individual members can provide feedback by providing input through the CAEECC process:

1. Business Plans
2. Solicitations (private—this is a proprietary bidding process; no WHPA or other public input here)
3. Implementation Plans
4. Year 2 – periodic reviews will be held with public input on how program administrators are doing toward their goals

Upcoming Schedule—this is the timeline for comments unless the CPUC changes the dates:

- 11/30/16 – Early Input on Supplemental Info
- 12/7/16 – Coordinating Committee Meeting
- 1/16/17 – Business Plans Filed by IOUs
- 2/15/17 – Stakeholder Formal Comments Filed

Uncertain Dates:

- Q2/Q3 2017 – Decision on Business Plans
- Q3/Q4 2017 – Solicitations/Implementation Plans

SDG&E will be the state lead for HVAC upstream programs, and they will coordinate with the other IOU program administrators.

Opportunities for involvement:

- Come to the webinar meetings <http://www.caeec.org/calendar>; webinars are public
- Read the draft Business Plans <http://www.caeec.org/bp-and-ip-info>
- Learn about the members <http://www.caeec.org/members>
- Get on our Constant Contact list <http://www.caeec.org/participation-1>

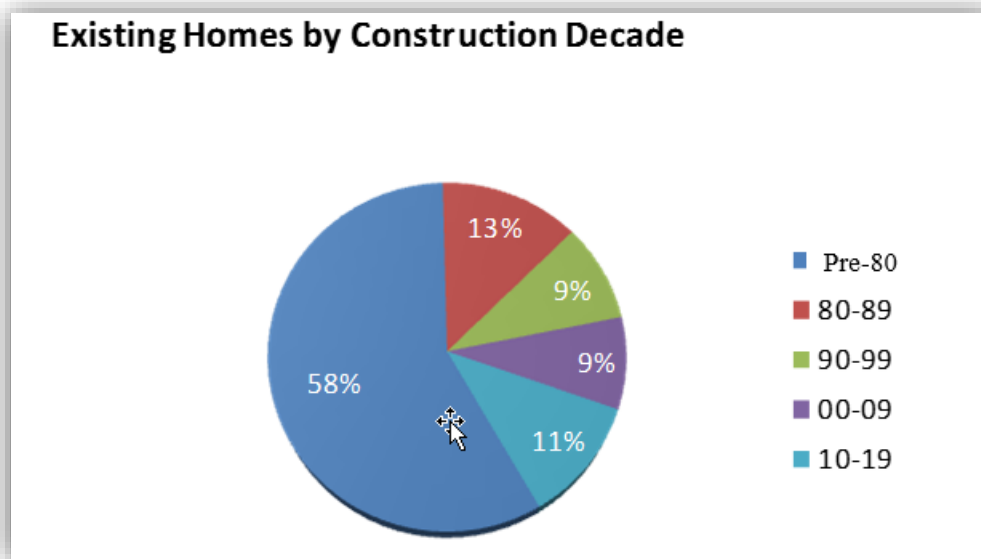
CAEECC wants to hear from WHPA because the WHPA is a huge voice that needs to be heard. We want people to know what they need to know in order to fix things.

COMMENT by Jeanne Duvall (PG&E) – There are a number of core programs that are part of the CAEECC progress.

EBEE (Existing Buildings Energy Efficiency) HVAC Action Plan – Presentation posted on website

PRESENTATION by Martha Brook (CEC) – The current efficiency savings trajectory is insufficient to achieve California’s clean energy and emissions reduction goals. Unlocking the energy efficiency potential of existing buildings requires market-focused solutions:

- Data analytics to support consumer decisions
- Research to better predict behavior and pricing impacts
- Goals are too large for just ratepayer & taxpayer funding; leveraging private capital will be required



The PPT (posted on the website) reviews the goals and schedule of the Existing Buildings Energy Efficiency Action Plan.

Goal 3 is directed at the building industry – Building Industry Delivers Innovation and Performance

Objective: A robust and sustainable building industry drives and satisfies demand

- Performance-driven industry and programs
 - Industry Partners Programs
 - Performance Assurance
 - Incentives tied to Performance
- High-performance workforce, education, and training
- Explore and encourage zero net energy retrofits

Goal 4 is directed at consumers – Californians Recognize and Benefit from the Value of Efficiency

Objective: Building values reflect energy performance and associated benefits

- Adopt property asset-related energy characteristics in building valuation
 - Introduce uniform property valuation approaches
 - Evaluate Appraisal Institute’s Green Addenda
 - Support development and deployment of Green Leases
- Energy performance information included in property listings
- Develop best practices for targeted ME&O

Goal 5 – Financing

Match financing with points in the consumer decision-making process trigger points, such as when the water heater breaks.

QUESTIONS

1. Are key strategies missing?
2. Are we unrealistic about the timelines to achieve?

EBEE (Existing Buildings Energy Efficiency) Breakout Sessions

COMMENT by Barbara Hernesman (SynergyNexGen) and EBEE Co-Chair – Our EBEE Working Group (EWG) members have volunteered a lot of time. They will receive the input from today’s breakout sessions, shape it, and get it back to the CEC for the Existing Buildings plan update.

The Working Group started two years ago on Gaps and Barriers—[EBEE Work Product I – EBEE Action Plan Alignment Table \(Gaps & Barriers\)](#)—the Work Product was completed July 2015.

In 2016 the CEC did its own brainstorming and gave the input to the EWG. They worked on it and sent it back to the CEC as a draft after an August 2016 approval by the EC. The final Work Product will be submitted to the EC in December.

COMMENT from Jeanne Duvall (PG&E) – As you look at these bullets, keep in mind that responses and solutions may be “out of the box.” How does this affect HVAC even if, at first look, the statement does not include HVAC?

Instructions for each Breakout Group:

1. Focus on the highlighted content in the breakout group specific reference documents.
2. Where applicable, prioritize the Sub-Strategies/Content in terms of importance to the HVAC industry.
3. Identify which Sub-Strategies/Content the WHPA can act on.

Guiding Questions:

1. For the Sub-Strategies/Content identified as those WHPA can act on:
 - a. Which Committees should work on these Sub-Strategies/Content?
 - b. What type of member categories should be represented when working on these Sub-Strategies/Content?
 - c. What does the WHPA need to be educated on in order to be able to address these Sub-Strategies/Content?
 - d. Are there any initial gaps and barriers related to these Sub-Strategies/Content?
 - e. What initial recommendations should be considered for these Sub-Strategies/Content?
2. From your stakeholder perspective, what type of questions would you like the EBEE Committee to address for these Sub-Strategies/Content?

EBEE (Existing Buildings Energy Efficiency) Breakout Session Report Outs – Reports posted on website

Breakout Sessions	Topics	Facilitators:	Note Takers
Group 1	Strategy 1.2: Concentration on Sub-Strategies 1.2.4, 1.2.5	Bob Wiseman	Paul Kylo
Group 2	Strategy 1.8: Concentration on Sub-Strategy 1.8.2 & Potential EE Bidder Challenges #3, #4	Charles Segerstrom	Shea Dibble
Group 3	Strategy 1.9: Concentration on CAEECC Goals #5, #6, #7 & Cal TF Bullets #3, #4	Barbara Hernesman, Mel Johnson, and Michelle Costello – larger section of 1.9 CAEECC and AITF	Elsia Galawish
Group 4	Strategy 1.9: Concentration on Sub-Strategy 1.9.6	Pepper Hunziker	Bob Sundberg
Group 5	Strategy 3.3: Concentration on Sub-Strategy 3.3.7 (SB 350)	Jim Caldwell	Ellen Steiner

Group 1 – California’s Existing Buildings Energy Efficiency Action Plan, 2016 Update Strategy 1.2 Non-Residential and Multifamily Benchmarking and Public Disclosure, Assembly Bill 802, Sections 1.2.4 and 1.2.5

1.2.4 Implement Statewide Program:

- Monitor and facilitate compliance with the benchmarking and disclosure regulations.
- Establish clear metrics to evaluate effectiveness.
- Encourage and support actions to improve building energy benchmarks over time.

1.2.5 Potential Mandatory Programs:

- Review the benchmarking and disclosure programs to determine whether they motivate improvements and result in sufficient savings.
- Establish the criteria and performance metrics needed for mandatory upgrade programs based on AB 802 benchmarks.
- Determine whether the program should be extended to smaller buildings.

CLICK HERE for full document used by this breakout group:

<http://www.performancealliance.org/Portals/4/Documents/inpersonmeeting/EBEE-AP%20Update%20Strategy%201.2%20-%20Breakout%20Resource.pdf>

Spokesperson Bob Wiseman (IHACI); Dale Rossi (FDSI), Elsia Galawish (Staff), Rob Falke (NCI), Allison Paul (CHF-CIRB), Bob Sundberg (Staff), and others.

- Data must be correlated with weather data to give any meaningful benchmark. The general thought is that the metric kw/hour/square foot is the metric that we need. It incentivizes the worst performers to improve.
- Idea of instant feedback to the consumer in a color rating system (red-orange-green), an audible, or other.
- Use data to filter and find opportunities.
- Incentives needed at back end to fix problems.
- Perhaps show WHPA how to use benchmarking so a customer can see feedback.
- Conversation on penalties if below a benchmark; incentives if above a benchmark. Different types of incentives possible and different agencies. Is there a role for government to take?
- The proposed 50,000 square foot limit is too high. We think we need to bring it down tremendously, maybe 3,000-5,000 square feet. This information would be very valuable.
- There is a provision for building owners to do annual reporting. We think that this should be done automatically with the AMI data.

QUESTION by Barbara Hernesman (SynergyNexGen) – Does the WHPA need to be educated on this? A one-page brief on this would be valuable.

ACTION suggested by Don Langston (ACCA) – Develop a survey to be sent from the WHPA to building owners: “Do you know that you are spending X many KWs per year? Do you want to learn how to reduce it?”

Group 2 California’s Existing Buildings Energy Efficiency Action Plan, 2016 Update Strategy 1.8 Energy Efficiency as a Clean Distributed Energy Resource; 1.8.2 & Potential EE Bidder Challenges #3 and #4

1.8.2 Market Transformation Program Portfolios: Evolve the energy efficiency program portfolios to focus more explicitly on market transformation activities in the upgrade marketplace.

- Understand the phenomenon of code shortfall in existing buildings and mobilize projects to close any gaps.
- Revisit administration of market transformation efforts.

Potential EE Bidder Challenges #3 and #4:

3. The willingness of EE bidders to accept performance assurance requirements, nonperformance penalties, and other risk considerations.
4. The ability to compensate EE providers for the full value of energy efficiency, including the avoided generation and transmission resources, if business models require an “all-in” compensation structure.

CLICK HERE for full document used by this breakout group

<http://www.performancealliance.org/Portals/4/Documents/inpersonmeeting/EBEE-AP%20Update%20Strategy%201.8%20-%20Breakout%20Resource.pdf>

Spokesperson Charles Segerstrom (EE Consultant); Shea Dibble (Staff), Don Langston (ACCA), Louis Fuentes (ACCA), Adam Scheer (PG&E), Jeremy Reeve (SDG&E), Carmen Best (CPUC), Swapna Nigalye (PG&E), Jeanne Duvall (PG&E), and others.

- The contractors gave us a reality check.
- We are talking about the most major paradigms when you talk about the meter instead of projected.
- When SCE or PG&E have closed their power plants, how do you procure EE in a way that is rigorous and measurable?

We broke it down to two categories, (1) Procurement and (2) Market Transformation.

1. **Procurement** – Resource acquisition by monitored metered data. When we look at the Existing Buildings Action Plan, we are doing meter-based procurement. Procurement is ripe and ready to roll.

ACTION for WHPA to consider establishing a new WHPA Committee on metrics, monitoring, CQI, CQM, code compliance, etc. It is going to be sweeping. This should get its own organization.

2. **Market Transformation** – We need devices that collect data that has not been collected before. Reference the Emerson presentation to the WHPA last year. The cost of a device to monitor data on a compressor is very low, and then you can remotely monitor how well the compressor is working.
 - Who should be at the table for procurement? Contactors and implementers are already in WHPA. With the analysis of big data becoming so important, the WHPA needs more people in data analytics and more people on the *internet of things*. We need the voice of the customer on this input team. This only works if a sale is made.
 - **RECOMMENDATION** – We need a reality check by knowing what the consumer is thinking. What if the payment doesn't happen until a year later? Ideally, the customers will become the voice of the program once they are engaged in the program.
 - **ACTION** for WHPA to consider – How about educating the WHPA on these new paradigms—on the rules of the road? They aren't very simple.
 - Carmen Best (CPUC) brought us back to earth on market transformation. Until the conclusions of the CPUC are on the street, it is too soon for the WHPA to engage.
 - **GAP** – What does market transformation need as support as we focus on the today of programs and devices?
 - Because of the nature of this paradigm shift, there are many elements to this conversation.

Group 3 – California's Existing Buildings Energy Efficiency Action Plan, 2016 Update Strategy 1.9 State Policy Leadership, CAEECC (Bullets 5, 6, and 7) and CalTF (Bullets 3 and 4)

CAEECC Bullets 5, 6, and 7

5. Provide greater opportunities to leverage industry expertise.
6. Increase transparency and enable a deeper understanding of offerings and long-term strategic vision.
7. Provide meaningful and useful input during early stages of design and during augmentation of efficiency business plans.

California Technical Forum Bullets 3 and 4

3. Adopt open source modeling software to increase transparency and reduce costs of model-based savings estimates.
4. Provide clear, easily applied guidelines to measure development.

CLICK HERE for full document used by this breakout group

<http://www.performancealliance.org/Portals/4/Documents/inpersonmeeting/EBEE-AP%20Update%20Strategy%201.9%20-%20Group%203%20Breakout%20Resource.pdf>

Spokesperson Mel Johnson (DEO); Michelle Costello (SDG&E), Christian Weber (PG&E), Ron Jarnagin (ASHRAE), Sean Gow (SCE), Elsia Galawish (Staff), Barbara Hernesman (SynergyNexGen), Pete Jacobs (BMI), and others.

COMMENT by Michelle Costello (SDG&E) – Goals 5, 6, and 7 are centered on industry to have more transparency in input during the early stage of design. This is an unprecedented opportunity to have input before anything is filed. What the IOUs recognize is that while we had some industry participation, it is difficult to track all the hundreds of pages of Business Plans currently out there.

ACTION – Have the utilities sponsor a webinar for WHPA members to educate them on the IOU Business Plans. Business Plans are high level and provide strategic direction; they are not what the WHPA is used to seeing for IOU programs. The IOUs are now looking for the market to help design programs.

ACTION – Get industry engaged in the Implementation Plan (IP) process through the CAEECC process. Now is the time to engage in how this IP process will work. Identify people within the WHPA who can engage and report out. There are some great opportunities that are coming.

COMMENT by Mel Johnson (DEO) – It’s a good process to go through because once you hear about what people are doing to make things happen, it helps to set the stage for the industry. The HVAC industry needs to be at the table to have that conversation. With regard to CalTF Bullet #3, “Adopt open source modeling software to increase transparency and reduce costs of model-based savings estimates,” there is an ex ante review process for programs. HVAC is a variable, it’s very complex, not only for customers, but for system-wide approaches. How do you model that? The current modeling tool e-quest has been the tool. This is more of a call for (1) WHPA to come in and (2) industry to come to the table and say that there are ways that this can be done. CalTF is ushering these things in.

ACTION for the WHPA to form an Exploratory Working Group for the open source modeling, first to understand and then to provide input.

Group 4 – California’s Existing Buildings Energy Efficiency Action Plan, 2016 Update Strategy 1.9 State Policy Leadership, Section 1.9.6.

1.9.6 Energy Efficiency Collaborative – Statewide Agency Leadership – Form the Existing Buildings Efficiency Collaborative (EBEC) to lead and coordinate progress toward energy efficiency across the energy agencies.

CLICK HERE for full document used by this breakout group

<http://www.performancealliance.org/Portals/4/Documents/inpersonmeeting/EBEE-AP%20Update%20Strategy%201.9%20-%20Group%203%20Breakout%20Resource.pdf>

Spokesperson Pepper Hunziker (Tre’Laine Associates); Talbot Gee (HARDI), Bob Wiseman (IHACI), Derek Okada (SCE), and others.

- The CEC is creating an Existing Buildings Collaborative state agency. It is challenging to figure out how the WHPA could contribute to this agency. Creating an agency to coordinate other agencies could be complicated.
- There is the need for participation beyond the WHPA and beyond HVAC.

ACTION – EBEE would be the WHPA Committee that could play a role with this new state agency. If you ask who should play a role in AB 758, there are about 27 agencies if you look at health, workforce economy development, etc. Who would be a contributor and who would be adversely impacted?

Talbot Gee (HARDI) and Derek Okada (SCE) have ideas on how the HVAC industry could help on a policy level.

COMMENT by Talbot Gee (HARDI) – The whole point is cross agency and cross cutting. This is very relevant to AHRI, HARDI, and ACCA at a national level. For example, DOE policy conflicts with other federal agency policy and regulations. In California, ARB is in conflict with the CEC and CPUC. Additionally, AHRI is taking the lead with ASHRAE on the next generation of refrigeration, many of which will be mildly flammable. They figured out that no safety or building codes account for a flammable substance, and it could take 20 years to update the code. So it’s possible that the EPA requires certain refrigerants which code will not allow. Also, how do we deal with de-listed refrigerants?

ACTION suggested by Talbot Gee (HARDI) – I don’t see the need for a new WHPA Committee, but each WHPA Committee and Working Group should evaluate if their work triggers engagement beyond a single agency.

Group 5 – California’s Existing Buildings Energy Efficiency Action Plan, 2016 Update – Strategy 3.3 Energy Efficiency Workforce Alignment, concentrating on Strategy 3.3.7 (SB 350)



WHPA Annual In-Person Leadership Meeting Day #1 – November 17, 2016

Strategy 3.3.7 – Identify workforce competencies that must be developed to meet a doubling of energy efficiency by 2030 – Use the state’s primary workforce education and training institutions to engage the building industry, map industry priorities for efficiency to major occupations that will provide services, identify workforce competency gaps, and quantify the work needed to build a workforce to implement high quality efficiency projects at scale.

CLICK HERE for full document used by this breakout group

<http://www.performancealliance.org/Portals/4/Documents/inpersonmeeting/EBEE-AP%20Update%20Strategy%201.9%20-%20Group%203%20Breakout%20Resource.pdf>

Spokesperson Jim Caldwell (CCCCO); Ellen Steiner (Staff), Dominick Guarino (NCI), Brandi Turner (SDG&E), Mike Lawing (Honeywell), Eugene Silberstein (HVAC Excellence), and others.

- If you look around, who is responsible for getting the workforce ready to a fully engaged prepared workforce by 2020? The answer is that there is no ownership. Nobody can own it. It has to be an organization of like-minded individuals.
- What is the problem? The inaccuracy of the data is a problem.
- What is in it for me? For the contractor?

COMMENT by Dominick Guarino (NCI) – You have to make your workforce a differentiator.

- It needs to be a good business decision to have a qualified workforce.
- We need a lifelong learning capability.
- We need a competency model by role (career lattice).
- We need certifications for people so they have some standard measure of how people perform those jobs.
- How do you change the culture in the contracting business?
- To parents, HVAC is not a desirable career for their child.
- What skills do we need to meet the SB 350 goals? We think we have what we need with the WE&T Committee and that we have the right players, but maybe we need more industry players.

ACTION ITEMS:

1. Maybe the WHPA WE&T Committee needs to add SMEs in the data collection and analysis function to support WE&T so we can make data-driven decisions. The revelation is the urgency of dealing with this because we have three years.
2. The WE&T Committee needs to launch a plan to deal with this. Our IOU rep said we need something by mid-year 2017 by the WE&T Committee.

QUESTION by Carmen Best (CPUC) – Do you have the right people at the table?

RESPONSE by Jim Caldwell (CCCCO) – We think so, but we will look again to see if there are more people who should be added. Creating this data analysis function is sorely needed in the WE&T function.

Recap & Next Steps – Setting the Stage for Day #2

COMMENTS by Jeanne Duvall (PG&E):

1. These are fast-strike team exercises in the EBEE Committee. They have become a model for work in the WHPA.
2. For the first half of tomorrow we will discuss gaps and barriers.
3. In the afternoon, we will talk about the future of the WHPA.
 - a. What do we evolve into?
 - b. What do we need to do to take the next step to keep up with the fast-changing world?

Adjourn

The meeting closed at 5:04 p.m. PST.

Notes by Judy Key Johnson

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