

**Meeting Notes: Market Adoption Subcommittee – Conference Call
November 2, 2011 12:00 – 1:00pm (Pacific Time)**

Scribe: Wendy Worrell, WHPA Staff

Welcome, Roll Call and Cumulative WHPA Volunteer Hours – Bob Sundberg		
Attendees	Organization	WHPA Category
• Chris Forth	Johnson Controls/York Unitary Products	HVAC Manufacturer
• Serafima Higginson	Honeywell	HVAC Manufacturer
• Julie Humes, Mkt Adopt Chair	Lennox Industries	HVAC Manufacturer
• Daniel Jones	Honeywell ACS/ECC	Controls Mnf/Distributor
• Don Langston	Air Rite Air Conditioning & Refrigeration	Nonresidential Contractor
• KC Spivey, Advanced Tech Chair	Pacific Gas & Electric	Investor Owned Utilities
• Bob Sundberg, WHPA Staff	WHPA	Staff
Members Unable to Attend	Organization	WHPA Category
• Mark Cherniack, WHPA Staff	New Buildings Institute	Other Stakeholder, Staff
• Carl Cimino	Pipe Trades Training Center	Educator/Trainer
• Jason Hanson	Sierra Pacific	Residential Contractor
• Lizette Nielsen for Jeremy Reeve	San Diego Gas & Electric	Investor Owned Utilities
• James Tuleya (<i>left meeting early</i>)	Pacific Gas & Electric	Investor Owned Utilities
• Dave Waters	RSD Total Controls	Controls Mnf/Distributor
• Jonathan Woolley	Western Cooling Efficiency Center/UC Davis	Other Stakeholder

To not be repetitive, the individual names of meeting participants will be used, but the organization names will not be repeated in the body of the notes.

Bob Sundberg gathered volunteer hour counts (from the last meeting to this meeting) for attendees. Volunteer hours included efforts to talk with others about WHPA activities, subcommittee recruitment, the Action Plan and other areas that would support the activities of the Alliance.

- Serafima Higginson devoted a couple of hours to talking with John in Honeywell’s marketing group, showing him around the website and orienting him to the Alliance.
- Julie Humes put in about an hour of volunteer time since last meeting. She may also have a new recruit as well.
- Daniel Jones conservatively reported putting in 20 hours of volunteer time. Bob Sundberg split some of that total for Bonnie Gustavson’s group as well since Daniel is working with both of the subcommittees.

Bob Sundberg turned the meeting over to Julie Humes to talk about her recent attendance at the IOU HVAC Program Team Meeting.

IOU HVAC Program Team Meeting Attendance on Nov 26th – Julie Humes

Julie Humes asked KC Spivey to help summarize since she had a hard time understanding some of the people in the back of the room. From her perspective, she felt she had a positive reception and that some of the folks may not have known that the subcommittee was at a point of being able to help them with Market Adoption of some of the products. She brought up the “hot dry” and made people aware that a lot of contractors are struggling with replacement versus repair right now as a whole. She clarified that replacement is considered advanced technology at this time instead of something like a higher efficiency unit that costs a lot more. She also mentioned that a lower

cost widget to begin with at high energy efficiency returns or demand size savings might be a better starting point for the group rather than selling higher end, larger dollar total packaged of equipment.

KC Spivey agreed that Julie Humes' comments were received well. He also appreciated that Marshall was able to join. Marshall's suggestion to look at existing and future products that incorporate some level of onboard diagnostics really makes a lot of sense for the subcommittee. KC asked for the subcommittee's thoughts on that.

Julie Humes thought the diagnostics go "hand-in-hand" with what Mark and his committee are working on. She would also like to find out from other manufacturers/distributors what is currently being offered commercially that is having some trouble being adopted. That intel needs to be gathered.

KC Spivey confirmed agreement with that. It is in their portfolio implementation with the Commission for this cycle to do the diagnostics advocacy piece. They would "dove tail" well together.

Julie Humes asked KC Spivey to further explain the diagnostics advocacy piece.

KC Spivey explained that the HVAC Technology and System Diagnostics Advocacy (HTSDA) Program is in the Implementation Plan. Anthony Hernandez and Jerine Ahmed "own that piece" at Edison as the implementers. "Here, it is really divided out among the entire HVAC and Motors team."

Bob Sundberg added that one of the targets for the Market Adoption Subcommittee is a better understanding of emerging technologies and how they go from the discovery stage to the point where they are considered adopted within the Utility groups. This is when they become part of programs that have some degree of support: energy efficiency incentives, recognition in the energy efficiency database with some average energy efficiency gains (kw or kwh). Rather than the subcommittee owning and adopting one or two to walk thru, the goal is to find good candidates for learning the processes already in place and help make the connections between the subcommittee and the Alliance with each of the IOUs as well as with the State Agencies and Programs. This may provide a clearer pathway for how Industry can work with the State. Learning pathways on a couple of good target examples like those currently being explored could help provide some transparency for those outside the State as well. For example, the Commercial Quality Maintenance Program subcommittee with the Alliance has been working closely with ACCA and with ASHRAE in the Standard 180 and ACCA Standard 5 for maintenance for both residential and commercial. There are national implications to it rather than just in the state of California.

Julie Humes confirmed that the group is at the starting point. They have done a lot of legwork in trying to find the pathway and clarified that for those on the call last week.

KC Spivey also confirmed that a lot of work is needed in that area.

Julie Humes expressed that a protocol is needed, whether it is the Emerging Technologies Committee, the IOUs, a particular champion like WCEC or someone else. There needs to be somebody who contacts the Market Adoption Subcommittee with a product that is having trouble getting adopted in the market place, but could save energy efficiency or take a certain amount off the peak demand load. It would be nice if it was one organization.

Bob Sundberg provided a bit more background information. Historically, most of the IOUs have operated under the direction of the CPUC (California Public Utilities Commission) fairly independently. Within the last decade or so, especially the last couple of years with the formation of the Alliance, there have been a lot of efforts for the IOUs to coordinate their efforts and ensure that a certain type of product/technology measure was pursued. One IOU would take the lead. As soon as something proved ready for implementation, the others would try to replicate it so the good solutions could be spread statewide fairly rapidly. The intent is to "have good stuff spread, have stuff being tested in all of the areas, and things that showed initial promise but didn't bear out would not be replicated elsewhere." The efforts would go both ways – to industries as well as suggestions, ideas, input to improve processes for participation by Industry. "We are in the front end of a historical development."

Julie Humes has a follow-up call that needs to be made with the WCEC and Kristin Heinemeier. KC Spivey added that Mark Cherniack should also be included since he is the Chair of the Onboard/In-Field Fault Detection and Diagnostics Committee.

Within the next month or so, Julie Humes wants to put together a Straw Man to come up with potential pathways to market adoption. It would allow for comment and for sectioning out parts to see what works. There won't be a "super strong push off" until the beginning of the year due to the holidays. There is the one more call and then email activity to get things ramped up for a good "kick off".

ACTION: Julie Humes to have follow-up call with Kristin Heinemeier and Mark Cherniack, then email the content to the Market Adoption Subcommittee.

Bob Sundberg asked if the Fault Detection and Diagnostics involved residential and commercial.

Julie Humes confirmed it to be commercial at this point.

KC Spivey clarified that the Diagnostics Advocacy portion of the Implementation Plan is broader and would include residential as well.

Bob Sundberg questioned if it were just commercial along with the addition of ventilation, if it would include operating of the whole unit and not just the refrigeration cycle diagnostics.

Julie Humes clarified that she, Kristin Heinemeier and Mark Cherniack will be discovering that. She reminded everyone that she is the "least commercial" person on the subcommittee. She suggested that someone like Daniel Jones might be willing to take more of a lead on that in a subgroup in the future to enlighten in that direction.

Daniel Jones asked if for diagnostics this is for complete systems individual components that can involve either/or?

Julie Humes said that is not known yet.

Daniel Jones doesn't join these things to be self-serving for Honeywell, but they do have some products that lend themselves, such as Jade on the commercial side. It is a self-diagnosing economizer. There is nothing like that out there. It has been out for a few months. From the market adoption side, the normal tendencies to resist change are out there. He is learning in the field just the things this subcommittee goes through. People look at the product and question it being an economizer because it has a screen on it that tells them if something is not working properly, and all the diagnostics including down to set points. There is also a new PC module coming out for data extraction. PG&E is aware of this "type of stuff" for the QM 180 Program. Honeywell would love to have it as an option for the Program for Quality Installation. Each adoption is a little separate, but everyone does talk with each other. Everyone will need to "play together" to reach the Net Zero goals. On the residential side, their RedLINK product is catching on "quite nicely". It is wireless and "basically has all the diagnostics on board" that are available to homeowners.

Bob Sundberg felt Daniel's products were good examples of good products with slow recognition that are not recognized/used by Utility programs and have slower adoption than what they deserve in his opinion. Others probably have the same dilemma.

Daniel Jones expressed that Julie Humes solar is in a similar situation.

Julie Humes confirmed that the commercial solar product has that slow recognition and adoption rate as well, but that it is a large dollar item that the Subcommittee wanted to stay away from. Lennox loves the product that saves a lot of energy, especially on the commercial side, but if people are not buying up to a higher SEER, she didn't feel that as a committee, it would be something on which to "get our feet wet". She suggested starting with something

smaller. She felt that with input from Mark Cherniack and Kristin Heinemeier, there would be better understanding of what they are “looking at”. If it is economizers, then Daniel Jones could “run with this if he is willing and able”.

Daniel Jones commented that there are smart variable frequency drives now as well. They are at the cusp of joining a technology shift in the HVAC industry.

Serafima Higginson stated that as far as replacement, the whole idea for the new economizer is to be a single replacement for almost all older rooftop unit economizer platforms.

Bob Sundberg showed the Fault Detection Diagnostics Subcommittee in Goal 4 on the Performance Alliance website that Mark Cherniack and Kristin Heinemeier work to support: (<http://www.performancealliance.org/Committees/Goal4AdvancedTechnologyCommittee/FaultDetectionandDiagnosticsSubcommittee/tabid/259/Default.aspx>). Near the bottom after their goals and objectives and descriptions, there are a series of presentations in the “Meeting Minutes and Supporting Documents” section. It would be good to review them to learn more about the generic need to have Onboard Diagnostics improved and embedded to help improve efficiency levels and alarm when they are not efficient or functioning properly. Of particular note is the one from Purdue on 07/11. Bob also looked at Brett Close’s presentation from 05/11. It is a summary of a Calmac maintenance study. It is fertile ground to see what that Subcommittee has been working on and gain some of the key terminology and their approach to commercial packaged equipment.

Julie Humes appreciated Bob Sundberg bringing the cross-over knowledge that way.

Don Langston joined the meeting.

Bob Sundberg asked Julie Humes how frequently the HVAC Program Managers meet and if there is a degree of continuity with their meetings and this subcommittee going forward.

Julie Humes thought there may be some continuity, but that this was a specially called meeting.

Bob Sundberg clarified that he meant with the HVAC Program Managers meeting from all of the IOUs and asked if it is correct that there is a whole other team of Managers for Emerging Technologies Programs that meet on a regular basis.

KC Spivey confirmed that to be correct. They are hoping that Julie Humes can “hitch to those folks at their December 6 scheduled meeting”.

Julie Humes thinks she will be able to do that on December 6th, but is still awaiting final approval. She hopes to be far enough along to present “some good meat to the process”.

ACTION: Julie Humes to speak at December 6, 2011 Emerging Technologies Program Managers Meeting (if receive final approval).

Bob Sundberg asked Chris Forth if he had been to California once or twice between August and now.

Chris Forth has been there a couple of times on behalf of his distributor there (US Air Conditioning Distributors). They are doing some things with FDD, but it is limited to the commercial side. They have looked at Jade and are doing some “diagnostic stuff” on their own. He is heavily into several of those items.

Julie Humes asked Chris Forth if he would be interested in working with Daniel Jones in taking this further.

Chris Forth confirmed that he would. He was given residential about 3 years ago so most of his background is commercial.

Julie Humes acknowledged that the subcommittee members are currently heavy on commercial and lean on residential, which works for starting on a commercial product first.

Chris Forth can help out either way. He has a residential communicating controller that they sell as well that has diagnostic.

Julie Humes asked Chris Forth where he is located.

Chris Forth clarified that his main office which is a commercial facility is in Norman, Oklahoma, but that he has a second office for residential in Wichita, Kansas. He is happy to help wherever he can.

Julie Humes thanked Chris Forth and expressed appreciation for having another person involved from the manufacturing/distributing side. She stated that had been lacking and that it would be good to have a couple other contractors involved too. She acknowledged that Don Langston had been the commercial “mouthpiece”, but that he is “stretched pretty thin amongst all the WHPA committees”.

Chris Forth suggested he could “hit up” his distributor and see if they have anyone they could recommend.

Julie Humes accepted the offer to “bring more to the table”. Even better would be anyone with experience on the diagnostics for which the subcommittee is looking, who could talk about the problems that exist in the marketplace and help with both the definition and the solution.

ACTION: Chris Forth to check with his distributor to see if he can find a contractor with diagnostics experience to be part of the Market Adoption Subcommittee.

Bob Sundberg asked if there will be a recurrent opportunity for Julie Humes or someone on the Subcommittee to somewhat regularly meet with the Program Managers from the IOUs.

KC Spivey confirmed that can be done as needed with requests for agenda items submitted related to anything that needs a dialogue with the statewide team.

Daniel Jones asked if those meetings include other State’s Program Managers as well.

KC Spivey clarified that Daniel Jones may have been thinking of the Consortium for Energy Efficiency instead of the statewide HVAC team. The Commission requires them to run their programs in very close parallels. The morning portion of the meeting was devoted to the Energy Division staff at the Commission. There were some people who called in. Then Simon Baker (their main CPUC HVAC contact) was in attendance in the room. There is typically a portion of the meeting devoted to that and a portion devoted just to the Utilities. The Utilities’ portion is for the Energy Efficiency administrators doing the coordination piece. That part is the piece Julie Humes was able to dial into.

Julie Humes asked if Simon Baker was there.

KC Spivey said Simon Baker had already left.

Julie Humes asked for any questions and clarified that this is still “part one of two”. They still need to meet and do some determining. She requested that if anyone has products that are ready and out there with fantastic savings and economical costs, but are having trouble understanding why “they wouldn’t want to do it” and “why aren’t they doing it”, to please let her know. She would love to see what is there already to then compare with Kristin Heinemeier and Mark Cherniack.

Chris Forth said that most of his will be equipment or controls related – basic features from their catalog. One of their big challenges traditionally in the HVAC industry is that only the “premium” products have had some of the

diagnostics or energy saving features. They are also “premium” priced so that is not what is moving in mass in the market right now. All of his are a “premium” over standard product. He can give a quick run down from the Johnson Controls series of brands. He can summarize it and get it to the team.

ACTION: Chris Forth will get a summary of the Johnson Controls series of brands to the team.

Julie Humes confirmed she is looking for suggestions right now - if there are some diagnostics out now that aren't working – she will get together with her commercial team at Lennox and ask the same question. She encouraged Daniel Jones and Serafima Higginson to provide her something in writing.

ACTION: Julie Humes will consult her commercial team for ideas on diagnostics out there now that are not working for market adoption.

Bob Sundberg calculated that would be 3 of maybe 6 major contributors to the marketplace, which is a pretty quick input from industry.

Julie Humes expressed that it doesn't have to be proprietary. Maybe there are three different proprietary things that have a similar capability in the energy efficiency savings portion.

Daniel Jones hopes nothing proprietary that would cost more than the equipment itself is what will be found. He would like to see maybe a suite or a few products that are similar and would achieve the same thing act as a benchmark to move forward for things like CQM 180. For example, if a Standard is to be achieved, a list of products could be given that would help the State achieve those goals, but would also all have diagnostics. They may not be product specific necessarily, but rather feature benefit type specific.

ACTION: Daniel Jones and Serafima Higginson will talk with each other and put in writing the things they can come up with for ideas on diagnostics out there for Honeywell that are not working for market adoption.

Bob Sundberg commented that Don Langston is the “reality check” on the line for those that are directly in contact with the prospects/clients/end user customers.

Don Langston hadn't been at the last couple of meetings so he was trying not to jump in. Instead he was just trying to “take a pulse”. In talking with a customer yesterday with 15-16 small rooftop packages, he gave them two maintenance options. The customer is a Swiss chocolate importer in Irvine, California in about a 75,000 square foot facility. They put in a large walk-in freezer and refrigeration system with the building remodel. The rooftop packages were left as is since it is a distribution center with only about 4 people working at it, but they want the holding area to be 69°F. There are no economizers. They do not want to maintain their equipment. They don't even want to sign an agreement because they don't like to sign contracts. Don doesn't know how to answer that. One of the options Don gave was a Standard 180 based maintenance agreement that was a very attractive proposal. They have thermostats that need upgrading, but he didn't even have a chance to discuss economizers or anything. It would be useful to approach a customer with colorful pictures to demonstrate their package unit and the efficiency level it is running at (equate to miles per gallon), along with key features of the compressor, a possible economizer, the standard efficiency motors, etc. For example, “If a makeover were done and an economizer could be added to it, or if they could go to high efficiency motors”, the efficiency could be brought up by a “level of x”. It would need to be done in bright colors like something out of *USA Today* with bottom line information. People do not seem to be connecting the dots with ROI for energy.

Serafima Higginson mentioned that for economizers, for example, they have a saving estimator tool. How much is paid for gas, electricity, etc and the type of economizer is plugged in and then the tool provides the payback period and the savings. It would be a good tool to show the savings.

Don Langston said that he is probably at about 50-60% overall for maintenance agreements. In terms of equipment replacement and efforts to get to higher efficiency units, the price difference is what the customer focuses on and they want the lower priced option rather than the more efficient one.

Bob Sundberg clarified for Serafima Higginson that he has had the opportunity to present and work with Don Langston on the rooftop unit savings estimator because Bob also supports the Quality Maintenance Subcommittee. They have invited a number of the other contractors in that group to consider use of it. They are still trying to encourage them. One or two of them might be using it. Don is quite familiar with it and has it on his PC. They have tried to work through the numbers on a couple of candidates Don has had. It sounds like it would almost take “shock treatment” to get people to slow down and get rid of the lowest first cost mentality to what the actual multiple year or life cycle cost would be.

Don Langston confirmed that it is a pretty “nasty” marketplace right now where he is focused in Southern California.

Recruitment Strategies

Bob Sundberg asked Don Langston if he knows of any other commercial contractors and a few really capable residential contractors in other areas of the State that might help with geographic representation of the subcommittee.

Don Langston has a great contractor in Sacramento who needs to be on the subcommittee: Ruzwa Cooper from Cooper Oates. He is involved with ACCA (the Air Conditioning Contractors of America association). They have talked about concerns of the industry, but he may not currently be a member of the Alliance. He is a great speaker.

ACTION: Don Langston will reach out to Ruzwa Cooper about joining the Alliance and the Market Adoption Subcommittee and cc Bob Sundberg and Julie Humes.

Bob Sundberg asked Chris Forth if he had a chance to reach back to US Air Conditioning (their State distributor for York Products) to see if they had a potential candidate for the subcommittee.

Chris Forth said they have a pretty large organization so he needs to know if we want someone more residential or commercial so he can steer it in the right direction.

Julie Humes felt that with the first group it should be more commercial since, with the exception of her, most people on the call have commercial ties. After they see how that does, they could shift over to residential diagnostics.

ACTION: Chris Forth will ask US Air Conditioning if they are interested in helping and who they might recommend on the commercial side for subcommittee participation.

Julie Humes encouraged everyone to visit the “Information About Joining the Market Adoption Subcommittee” page for a better understanding of what the Subcommittee is looking for in potential participants. (<http://www.performancealliance.org/Committees/Goal4AdvancedTechnologyCommittee/MarketAdoptionSubcommittee/JoiningtheMarketAdoptionSubcommittee/tabid/282/Default.aspx>). Julie expressed that the recruitment push can wait until after the first of the year since she feels very confident getting started with putting a process in place with the core team of participants already involved in the Subcommittee. As the process continues on, more people can be invited in who have particular expertise in areas that might be missing. She would like to have someone involved who is diligent about devoting their time for the cause. There is something in it for all the OEMs, Distributors and Contractors. Marketing experience would also be really good.

Review of Randall Wong's Presentation on PG&E and California ET Process

The referenced presentation can be found in **Supporting Documents** at the bottom of the **Meeting Minutes, Supporting Documents and Links** section of the **Market Adoption Subcommittee page in Goal 4** of the **Performance Alliance website**:

<http://www.performancealliance.org/Committees/Goal4AdvancedTechnologyCommittee/MarketAdoptionSubcommittee/tabid/260/Default.aspx>).

Bob Sundberg commented that most people on the subcommittee did not or could not make it to the October meeting where this was presented. Randall Wong (PG&E) provided a presentation that helped the subcommittee walk through the State's approach to Emerging Technologies as well as the IOU's funnel from discovery thru the point where they are recognized, validated and placed on one of the schedules for Energy Efficiency Incentives. That is the point where it is on the schedule and supported financially. The IOUs then consider it "adopted." Many from industry, on the other hand, consider that point the start or an early stage of market adoption when the technology or practice is "mainstreamed" or in common use. People may be considering adopting it, but it is far from mainstreamed. Randall Wong's presentation is a very thorough summary of the state and IOU processes. Bob encouraged everyone to review and study it.

Additional Thoughts/Comments

KC Spivey forward Bob Sundberg the Portfolio Implementation Plan posted on their internal intranet, but it is a public document on the CPUC Energy Division website as well. He sent the HVAC piece that speaks to the Statewide Utilities agreement with the Commission to focus on in this Portfolio cycle. It is likely that the current cycle will be extended 1-2 years because of delays in rule making for the next cycle. There will be a planning cycle in between rather than jumping from one three year cycle to the next. The current cycle will run at least through 2013 if not 2014.

ACTION: Bob Sundberg will send out the Portfolio Implementation Plan he received from KC Spivey to the Market Adoption Subcommittee.

Next Meeting – Bob Sundberg

Julie Humes commented that the next meeting is supposed to be December 7th, but that she will probably be in California with KC Spivey's group on December 6th. She is not sure she will be back in time. She contemplated pushing it back to the 14th.

Bob Sundberg confirmed that mid-November the first Executive Committee and Council of Advisors meetings will take occur and take the place of what used to be the Steering Committee. The frequency and manner of meeting will be determined then.

Julie Humes suggested setting the next Subcommittee meeting for December 7th. She will plan on being somewhere near a phone at the correct time.

Next Meeting: Wednesday, December 7, 2011 from 12:00 – 1:30pm PDT.

Adjourn

Action Items Summary

ACTION: Julie Humes to have follow-up call with Kristin Heinemeier and Mark Cherniack, then email the content to the Market Adoption Subcommittee.

ACTION: Julie Humes to speak at December 6, 2011 Emerging Technologies Program Managers Meeting (if receives final approval).

ACTION: Chris Forth to check with his distributor to see if he can find a contractor with diagnostics experience to be part of the Market Adoption Subcommittee.

ACTION: Chris Forth will get a summary of the Johnson Controls series of brands to the team.

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