Evaluation Committee Meeting Report – September 2010

September 24, 2010 10:05am-12:51pm

Attendees:

Debbie Kitchin, Board Member – Committee Chair
Alan Meyer, Board Member
Dan Enloe, Board Member (by phone)
Daniel Davis, Board Member
Tom Eckman, Expert Outside Reviewer, Northwest Power and Conservation Council
Jessica Rose, New Buildings Program Manager
Spencer Moersfelder, Existing Buildings Program Manager
Fred Gordon, Director of Planning and Evaluation
Steve Lacey, Director of Operations
Allie Robbins, New Buildings Program - PECI
Glenn Hanson, New Buildings Program - PECI
Diane Ferington, Residential Sector Lead
Pete Catching, Manager of Planning & Economic Analysis
Peter West, Director of Energy Programs
Matt Braman, Planning Program Manager
Susan Jamison, Residential Marketing Manager
Sue Fletcher, Communications and Customer Services Sr. Manager
Oliver Kesting, Business Sector Lead
Amber Cole, Director of Communications and Customer Service
Phil Degens, Evaluation Manager
Jason Christensen, Evaluation Intern
Sarah Castor, Evaluation Project Manager
Brien Sipe, Evaluation Project Manager

Meeting began at 10:05am

Topics Covered:

1. **Evaluation Schedule and Ongoing Project Summary**
2. **2010 Residential Awareness Study**
3. **Clean Energy Works Portland Process Evaluation**
4. **2008 New Building Impact Evaluation**
5. **Next meeting date (Friday October 29th 10am-1pm) and tentative agenda**

1. Evaluation Schedule and Ongoing Project Summary

Sarah presented an overview of the current evaluation projects.

- Existing Buildings 2009-2010 Process and 2008-2009 Impact evaluations nearing completion
- New Buildings 2008-2009 Process and 2008 Impact evaluation completed
- NEEA Residential Building stock assessment underway
- NEEA Commercial Building stock assessment developing scope of work
- Fast Feedback pilot completed and continuing

- Plant Closure Study developing Statement of Work.

Alan asked for clarification on what the plant closure study would focus on; staff have been discussing the scope of work and it continues to evolve. Currently, industrial projects utilize a ten year measure life on plant equipment and processes, this is an assumed average. The closure study may help to revise this figure (either up or down). Debbie asked if a review of other evaluation practices in other programs would be worthwhile. Fred mentioned that there isn't much literature in the field, and comparisons haven't been that worthwhile. Dan E. reiterated that the investments made by customers are in good faith, as they are putting up substantial amounts of their own capital, and shutdowns aren't intentional or foreseen. Fred indicated we don't have punitive measures in our contracts, except with mega-projects, which may have clauses to protect Energy Trust funds if such large scale projects go sour.

2. 2010 Residential Awareness Study
Contractor: Research Into Action

Sarah presented the study findings for the third and latest Residential Awareness Survey (RAS). The purpose of the study is to understand customers' general level of interest/awareness in energy efficiency, help design marketing and programs, and track trend over time. This year we decided to survey only households served by our funding utilities. We also oversampled in Cascade Natural Gas territory, since that customer base is small and proportional sampling would provide imprecise results. Overall, the sample was weighted to be representative of our customers in terms of region of the state, home ownership status and age.

To the survey this year, we added BPA's "gearbox" questions for segmentation – mostly attitudinal questions, along with some demographics. Adopting BPA's gearbox approach offers more opportunities for comparable analysis across Northwest DSM programs and collaboration in marketing campaigns. The segmentation of our survey respondents has not been completed yet (this will be done in house). We also added questions to test perceptions of Energy Trust and various marketing messages.

Awareness and reported participation
Caveat on overall awareness of Energy Trust: 2009 and 2010 awareness levels are not directly comparable as presented in the report, because the 2009 study surveyed Oregon residents in areas not eligible for our services. The correct, comparable results on overall awareness are 43% in 2009 and 48% in 2010.

In addition, the decrease in awareness in Cascade territory from 2009 to 2010 is not statistically significant as the 2009 sample was around 30 individuals, compared to nearly 100 people in 2010, lending more confidence to 2010's finding. It was further noted that 2010 represents a substantial increase over awareness in the 2008 survey in Cascade's territory (with once again, a limited sample size).

There was an increase this year in the proportion of respondents who heard about Energy Trust through mass media – this was the top channel, over the typical utility channels. Diane indicated Senate Bill 838 funds spent on marketing may have resulted in the increase in individuals hearing about Energy Trust through mass media in 2010 compared to 2009. Amber indicated that there is limited real estate in utility mailers, and Energy Trust doesn't have that many opportunities to get collateral out through that channel. Alan indicated that the mass media jump is pretty astounding, as it went from 3rd to 1st in the way people reportedly first heard about Energy Trust.

Overall, reported participation (not actual participation which will be covered below) was up from 7% in 2009 to 17% in 2010, likely due in part to better crafted questions about participation. Alan asked about why the reported participation of Pacific Power customers is so much lower than other utilities served. A few explanations are worth exploring: Pacific Power funds tend to be more focused on industrial and commercial projects. In addition, many Pacific Power customers in southern Oregon are heated by Avista gas, resulting in less opportunity for residential customers to participate.

Alan also inquired about how participant homes line up to that of Oregon's housing stock overall. Awareness survey results indicate Energy Trust programs seem to be attracting a disproportionate amount of older homes, where there are more opportunities for weatherization. Reported participants are more likely than average to have natural gas heated homes, with Amber explaining that NW Natural is getting better at mailing out inserts for Energy Trust, and Fred noting our long history with gas furnace incentives.

Attitudes and perceptions

Overall, reported participants were slightly more likely to display a "global" view of energy, but there were no other differences in attitudes and perceptions between reported participants and nonparticipants. When asked to rate the effectiveness of several actions in protecting the environment, recycling was rated more effective than energy efficient actions, but Peter noted that this may be true in certain contexts, and there is no way to conclusively compare the two. These questions will be used mostly in the segmentation.

Respondents were also asked to rate different marketing messages on their effectiveness at motivating them to take action in their home, on a scale from 1 (would not motivate) to 5 (highly motivating). Our most commonly used "You can save energy and money" came in at the top. Amber indicated that recently, messaging has been shifted to focus more on saving money, and found the results interesting as the energy cost-related message "invest now and watch savings add up later" was lower on the list of motivators than environment-related messaging.

Due to interest in a possible cold water detergent incentive, the survey asked what percent of laundry loads the respondent washed in cold water only, and average was about 50%. Debbie asked if this measure would be educational only. The residential programs are still trying to figure out a delivery method, but the incentive would be for the detergent itself, or possible providing the detergent during Home Energy Reviews. California has had success in laundry behaviors by delivering samples. Daniel D. asked if there is a definitive study on the efficacy of the detergents, and there have been some studies that show savings, but some also show that the cold water detergents may work better in non-front loading (i.e. less energy efficient) washers.

In terms of actions respondents would like to take in their homes, 34% would like to weatherize and 27% would like to install new windows. Phil recommended continuing to give some incentive on windows, even with their less-than cost-effectiveness, to keep a presence in the market and provide visibility to efficient windows. He also recommends developing a stand-alone windows measure that does not require a second measure installation. This second measure requirement for windows is the one of the top residential complaints about our program.

Actual participation
The analysis of actual participation for 2010 respondents follows one done for the 2008 and 2009 surveys by Matthew Taylor, former evaluation intern, and Research Into Action. As with 2009 respondents, 2010 respondents underreport their actual participation in the program. Overall, we found 26% of the valid addresses of survey respondents in our FastTrack system as participants, compared to only 17% reported participation.

Alan asked if NW Natural more actively promotes our programs, due to the high level of actual participation (37%). Phil responded that NW Natural customers are also likely to be Pacific Power or PGE customers and so have more opportunities to participate in our programs. Fred asked about the uptick in actual participation (from 19% for 2009 respondents) , and asked if FastTrack backs up the increase in participation. Phil indicated that analysis earlier this year showed participation at around 23% of residential utility accounts, so this is within a reasonable range. The main conclusion was that asking respondents to self-report can provide a certain context for gauging participation, but may not necessarily be that accurate.

Phil indicated that the plan is to repeat the survey next year with a smaller sample. The study is relatively inexpensive and the residential programs and communications staff always have new questions they would like to ask each year. Amber said the new ISP system may make applying segmentation findings easier, as the customer database will be able to include more personalized information.

Alan asked what the value is of doing the survey every year. In addition to the information from new questions each year, Diane feels that this study is like an impact evaluation in that it assesses the effectiveness of marketing and program activities in reaching customers. The cost of the residential awareness studies is easily made up for by bringing residential billing analysis in-house.

Amber also responded that the timing of the study and the findings are very helpful for marketing budgeting purposes, and are used to adjust strategy for the next year. Alan sees value in this approach too. Diane noted there was a large investment in PR in southern Oregon, and the awareness results indicate that the marketing push has paid off.

Daniel D. expressed some concern about the disparity between reported versus actual participation, and that the amount of time spent exploring this issue (in the presentation and analysis) makes it seem very important. Sarah indicated that less time can be spent on asking people about self-reported participation in future surveys, and simply use program tracking data to assess residential participation levels.

3. Clean Energy Works: Portland (CEWP) process evaluation
Contractor: Research Into Action

Phil presented the results of the draft report on the CEWP pilot; slides from evaluations of early phases were presented at previous Evaluation Committee meetings. The pilot is on its way to completing its goal of weatherizing 400 homes, using 16 BPI-certified contractors. A federal grant of $20 million has been received to expand statewide. A new nonprofit, Clean Energy Works Oregon (CEWO) has now been formed to implement the statewide program.

Debbie asked about the goals of the pilot. Diane reported that pilot goals are 500 homes in total, with 400 being recruited by Energy Trust, and 100 recruited through a community action group

in the Cully neighborhood. Alan asked if we're on track to hit to the 400, and Diane indicated we will go over 400, as there is no time limit on the pilot.

This report includes results from participant and drop-out surveys (81 and 33 respondents, respectively); interviews of staff, contractors and stakeholders; and a review of documents. Phil suggested surveys as a useful way to identify other services for the 582 applicants who fell out after being screened in. Debbie indicated a standard sales approach to channel these drop outs into other programs could be very successful (e.g., GreenStreet lending, standard Home Energy Solutions offerings, etc.).

Participants that successfully completed projects have a median income of $65,000, median square footage of 1,300, and 1936 is the average year the home was built. They were highly motivated by saving energy, lowering heating bills and increasing home comfort. Alan asked about the respondents who reported wanting to save energy by participating, but the responses didn't indicate why they wanted to save energy (e.g. to save money?). Staff responded that the survey did not ask them to specify. Participants highly valued the services of the program Energy Advocate; they were slightly less satisfied with the contractor, but still mostly happy. Almost all would recommend the program to friends or family.

Debbie asked for a modification of the evaluation report to clarify at the beginning that a customer does not pay for the home assessment upfront – it is rolled into the loan if a participant goes forward. Energy Trust spends $600 dollars for each 'test-in' that does not result in a signed contract following a 'test-out': $300 to the contractor for the assessment and $300 to the Energy Advocate for services. Despite the high cost of drop-outs, Diane reported there is an 80% close rate on projects that are screened in.

Comments from participants outlined a need for more program transparency and flexibility, and more clarity on the financing details and fees included in the loan. Debbie observed that many participant complaints were about the cost of the measures and the lack of a competitive bidding process. Phil reiterated that generating off-ramps for drop outs to enter other programs would be useful to present to these folks (channeling into Greenstreet lending offerings, standard HES track incentives, where they can get multiple bids and minimize total costs). The group discussed the elements of the program that drive up costs, such as the requirements to pay prevailing wages. Alan asked about the requirement of only one contractor bid, which can lead to higher costs to consumers and eliminate competition. Staff indicated that multiple bids could result in multiple 'test-ins' resulting in even higher costs from dry holes, and complications with having a second contractor use a first's 'test-in' findings.

Pilot drop-outs were those that decided not to go forward with the project and or financing after being screened into the pilot. Most had gone through the home assessment and received a bid from the contractor. On average, these respondents have a median income of $75,000, median square footage of 1,600, and 1940 is the average year the home was built. Surveys found that most are continuing with or plan to do energy savings projects outside the pilot.

They were slightly less satisfied than participants with the services of the Energy Advocate and contractor. Comments highlighted their desire for more financing options and greater flexibility in selecting a contractor and choosing the size of the project. They were also more skeptical of program fees and the role of the Advocate.

Debbie said that more screening would be useful to see if the potential client is a good fit for the program, just as individual businesses do when they talk with a client initially; the CEWP

program is not the right program for everyone. Diane suggested charging the $300 for the home assessment, but refunding it if the participant completed the project.

The group turned to a discussion of the financing mechanism. Originally, the program intended to attach the debt to the meter, so there was security on payback. Currently the loan is underwritten by Shorebank, leading to more risk. Fred indicated that the program is still evolving and isn't quite to the point of the original pilot plan.

The group discussed the fact that drop-outs had more contact with Energy Advocates, which increases the money lost when someone drops-out. The evaluator recommended tracking all contact with pilot participants and drop-outs to better quantify costs.

The report also noted some complaints from participants and drop-outs that they did not receive their home assessment report or an itemized list of measure costs and savings. Steve indicated that all consumers need to receive a cost and savings report after the test-in, as it is a part of the EEAST legislation.

Tom asked about how much deeper the CEWP projects are than the standard Home Performance with Energy Star (HPwES) or the Home Energy Solutions (HES) program tracks. Phil said that CEWP participants are undertaking more early replacements on equipment such as furnaces. Tom indicated that savings sooner is fine, but savings over time will be unchanged. Steve noted that there is a significant difference between CEWP project and HES projects. CEWP and HPwES are very similar. Tom suggested looking at the time and cost investments for each of these programs relative to the savings achieved. Many folks may install measures over time piecemeal, and in a cheaper way (relative to CEWPs high touch model), and wondered how much value added the CEWP approach is generating.

Debbie suggested that an account rep could help you choose a program path as a first touch. But even in this case, the prospective participant may not know what they want, and intention and action will still be disconnected. Fred indicated that the program is beginning to utilize online forms and call center resources to communicate with potential participants to help lower costs (rather than face to face interactions with energy advocates at a potential participant's home).

Fred raised the issue of larger capital investments in the program, such as furnaces and water heaters; there are negligible savings on the water heating side, and 95% efficient furnaces are becoming the baseline due to federal tax incentives. Early retirement of these appliances can help increase the efficacy of the program; if this is not the case, Fred said supporting this delivery mechanism could become a financial issue.

Alan asked about Energy Trust's involvement in CEWO. Diane said that the agency will be collaborating with the statewide program. Individual communities may use CAP agencies to provide the services, but if Energy Trust services are used, Energy Trust energy advocates will be meeting with potential participants. Diane also noted the weekly CEWP meetings to discuss how the program is operating. Amber noted that committees have been formed to share learnings from the CEWP pilot to apply to the CEWO program. Next year, CEWP will be absorbed into the larger CEWO.

As far as progress on CEWO, Diane indicated that ETO advocacy services will continue through Q1 2011. The CEWO intake form is in beta form and is being prepared for a launch in late Q1 or early Q2 2011. Communities may identify their own banks to provide financing, and have

flexibility in how they choose to work with the program. All initial CEWO projects outside Portland will be rolled out in a pilot context to attempt to learn the best way to operate this sort of program.

Final study recommendations were to clarify the role of the energy advocate and change the term advocate to avoid implying that they are negotiating solely for the benefit of the homeowner. Debbie noted that if they are to play a “general contractor” role in projects, there is a legal requirement for liability insurance and licensing. The evaluator also recommended lowering the energy intensity requirement for participation and possibly reducing the credit screening to bill payment history.

4. Draft 2008 New Buildings impact evaluation
Contractor: The Cadmus Group

Sarah presented the results from the New Buildings program process/impact evaluations. SAIC was the PMC during 2008; PECI became the PMC as of the 2009 program year. For the evaluation, site visits were made to 48 buildings completed in the 2008 program year, representing a mix of building types and measures. Engineering review and analysis were performed with data collected. Short term metering and energy simulation modeling were used on select projects. Overall, the program realization rate was 86% for electric measures and 93% for gas measures.

Realization Rates by Measure Category

Measure Category	Measures	Reported Electric Savings (kWh)	Reported Gas Savings (therms)	Electric Realization Rate	Gas Realization Rate
Standard Lighting	546	6,731,354	0	121%	-
Standard Motors	62	1,922,886	0	95%	-
Standard HVAC	245	1,025,395	77,860	106%	119%
Standard Other	56	141,343	58,090	86%	63%
Custom	64	4,454,088	116,881	92%	72%
Custom Gas	10	0	58,191	-	96%
Custom HVAC	13	3,319,194	51,034	20%	93%
Custom Lighting	52	10,961,855	0	92%	-
Custom Motor	10	1,443,220	0	34%	-
LEED	15	3,138,759	102,849	66%	115%
Total	**1,073**	**33,138,094**	**464,905**	**86%**	**93%**

Higher-than-assumed operating hours resulted in a realization rate of more than 100% for standard lighting measures. Some standard motors were found to be installed in applications where efficiency was code, resulting in no savings for those measures. Spencer asked about the average incentives for the code motors which received no savings, indicating that there was a $3,000 threshold for doing a post-install inspection to verify the application. PECI checks the motor application when determining incentives. Steve asked if they metered motors, Sarah said

they did not. Various participants noted that federal standard for motors have changed in the last few years.

Within standard HVAC measures, some of the demand control ventilation (DCV) measures were found to have been calculated incorrectly, resulting in realization rates over 1,000%. Because these were not characteristic of other standard HVAC measures in the program, the realization rates were not included in the category average. Dan E. asked about demand control ventilation, and Glenn explained that a CO_2 sensor is used to monitor occupancy and adjust the amount of outside air allowed in to maintain air quality.

Spencer asked if the evaluation explored code and standard practice for lighting measures. Sarah reported the contractor did not examine lighting power density for standard measures, but did for custom lighting. For all lighting measures, standard practice was used to assess savings. Spencer indicated that the program was nervous about incenting lighting projects in 2008 that may have been code or standard practice. The study results for lighting indicate that those fears appear to be unfounded and the program performed well.

As category labels, “Custom” and “Custom Gas” need to be replaced by labels that better describe the measure type, since the current labels encompass a mix of measure types. As with standard motors, the realization rate for custom motors was reduced due to variable speed drives (VSDs) installed in applications where they were code. Alan asked about the sampling methodology for VSDs, Phil indicated that the sampling plan examined all groups of measures and code installations can result in very low RRs.

On the largest project of 2008, a custom HVAC system, the savings were miscalculated and resulted in a loss of 8 percent of total program savings for 2008. The simple calculation error could have been caught with a second internal review of the measures, and this is now routinely done by PECI for large projects.

On LEED projects, realization rates varied substantially, due in part to low occupancy rates. Debbie expressed concern on the LEED buildings disparity in electric and gas realization rates. Steve asked for clarification on realization rates and low occupancy, and Phil noted this is an ongoing evaluation discussion. Should the savings be adjusted to account for a lack of full occupancy for the first few years? Or take a middle point of full and partial occupancy savings, and pro-rate? Steve and Tom indicated that the agency should have a written consistent procedure for dealing with occupancy issues, similar to the policy for reduced production in the industrial programs. Phil indicated the preference is to keep this calculation simple, rather than having a need to go back and do expensive site visits. Debbie highlighted the importance of economic effects and how long they last. Phil indicated one method would be applying long term occupancy rates for all buildings (95%). Tom indicated that the long term occupancy rate is the best way to go.

Also on LEED projects, some projects were not built as modeled, reducing project savings. Phil said that the building calculations should reflect the as-built conditions, and if the model is not reflective of as-built, new modeling is needed.

PECI has already implemented several of the study recommendations, including developing a more robust DCV calculator, implementing a second review on large measures, discontinuing the incentive for LED exist signs (now standard practice), and checking motors applications against code.

5. **Next meeting scheduled for Friday October 29th 10am-1pm.**
   Tentative agenda items:
   - Billing Analysis: 2008 Existing single family program
   - Multifamily Non-energy benefits study
   - Fast Feedback
   - EB Process Evaluation
   - NB Process Evaluation

Meeting adjourned at 12:51pm.