Evaluation Committee Meeting

December 9, 2011 11am-2pm

Attendees

1. Debbie Kitchin, Board Member – Committee Chair
2. Dan Enloe, Board Member
3. Alan Meyer, Board Member
4. Ken Canon, Board Member
5. Ken Keating, Expert Outside Reviewer
6. Tom Eckman, Expert Outside Reviewer, Northwest Power and Conservation Council
7. Phil Degens, Evaluation Manager
8. Sarah Castor, Evaluation Sr. Project Manager
9. Ryan Eddings, Evaluation Intern
10. Amber Cole, Director of Communications and Customer Service
11. Diane Ferington, Residential Sector Lead
12. Fred Gordon, Director of Planning and Evaluation
13. Kate Scott, Residential Project Manager
14. Kim Crossman, Industrial Sector Lead (by phone)
15. Lakin Garth, Planning Project Manager
16. Lewis Colon, Sr. Manager - Strategies and New Initiatives, Conservation Services Group (CSG)
17. Matt Braman, Residential Sector Manager
18. Pete Catching, Planning and Economic Analysis Manager
19. Peter West, Director of Energy Programs
20. Rachael Singer, Customer Relations and Marketing Manager
21. Steve Lacey, Director of Operations
22. Sue Fletcher, Communication and Customer Service Sr. Manager
23. Ted Light, Planning Project Manager

The meeting began at 11:05 with introductions and a review of the agenda.

Agenda

1. Industrial Energy Improvement Pilot Evaluation
2. Kaizen Blitz Pilot Evaluation
3. OPOWER 3-Month Survey Results
4. EPS Tool Comparison Study

1. Industrial Energy Improvement Pilot Evaluation

Contractor: Navigant Consulting

Phil presented results from the second of two reports on Industrial Energy Improvement Pilot (IEI) 2009 participants. The previous report was completed about a year ago. IEI is a one-year continuous improvement training process, involving ten industrial customers participating in monthly networking/training workshops. There is one-on-one coaching for participants between workshops. Participants learn how to track their energy savings at the meter level and incentives are provided for first year savings at $0.02/kWh. Together, participants from the 2009 program year saved 8% of total electric consumption (13 million kWh) in their first year.

For this evaluation, seven participants were interviewed, along with three PDCs in an effort to learn about participants not interviewed.

Findings:

- Six maintained their savings and one improved upon them
    - One increased savings from capital projects; one increased number of capital projects but Operations and Maintenance (O&M) savings declined
- Most had no changes in plant operations or production levels
- One had increased production and successfully transferred EE O&M processes to the new department; increasing energy savings
- Only one reported a decrease in production due to the recession
- All seven reported completing projects after the conclusion of the IEI
- Five reported they were engaged in ongoing projects that were started during the IEI training, and five reported that they had plans for additional projects

Examples of O&M activities undertaken:

- **Altering equipment operation:** reducing HVAC equipment to 8-10 hours a day instead of 24/7; programming a big motor to shut off automatically; changing system set points; changing start up times to take advantage of off-peak rates
- **Promoting behavioral changes:** performing night audits to encourage employees to shut off lights and computers; running an awareness campaign; installing monitoring tools on equipment; introducing a recycling program; lowering cubicle walls (presumably for daylighting)

Examples of capital projects:

- Lighting upgrades and controls installations
- Equipment replacements: Four HVAC units, 100 hp motor, air compressor, vacuum pump, leaky check valve
- Installing a variable frequency drive (VFD) to run a 40 horsepower dust collector

The number of capital projects involving Energy Trust increased after IEI (2.1 million kWh total). Prior to this, only two facilities had received incentives.

Participants' future plans include:

- **O&M (6 firms):** Improving data center operations; developing an automated, real time system to analyze equipment; improving EE of other pump stations; changing O&M policies to conform to LEED
- **Capital projects (4 firms);** lighting upgrades and controls installation; equipment replacements; switching out old pump station equipment; HVAC equipment upgrade
- Two firms are pursuing certification (LEED and Energy Star)

Other findings:

- Five continue to have their Energy Team meet regularly
- All track their energy use: six using the Monitoring, Tracking & Reporting (MT&R) tool provided by the IEI contractor; one using PGE's service
- PDC's report indicated one of the firms not interviewed had ceased tracking energy usage, though it's Energy Team still met
- Some IEI energy practices have spread to other plants (in most cases outside Energy Trust territory)
- PDCs report that hand-off of first (2009) cohort had issues that have been for the most part resolved in later cohorts

- PDCs suggested guidelines be developed for PDC and Industrial Technical Service Provider (ITSP) roles and responsibilities
- PDCs also indicated that participants have a corporate culture that recognizes the opportunities around efficiency and a corporate readiness to commit resources

Suggestions for improving IEI from 2009 participants:
- Share more success stories and case studies
- Presentations from previous participants
- Assist in developing presentations to management
- Begin tracking energy before participating in IEI
- Need active management support, employee involvement and education
- Only require participants complete course work relevant to their facility

Recommendations:
- Continue the IEI as a regular component of the Production Efficiency (PE) program
- Ensure high-level management support and a mix of involvement, including team members from the shop floor
- The format of the trainings should emphasize face to face meetings
- Have participants begin metering and recording energy consumption prior to the start of the IEI program
- Leverage participants' enthusiasm for the IEI and their plans to continue and expand IEI activities by:
    - Asking past IEI participants to speak at current trainings
    - Hosting annual follow up meetings to discuss progress with initiatives
- IEI contractor should continue enhancements to their MT&R tool functionality
- Include training and support for presenting success and achievement to upper management

Energy Trust Take:
- Many of the recommendations have been adopted by the program
- IEI now in its 4th year/cohort
- IEI has spawned a set of other services and is being piloted in the Existing Buildings program

Group discussion:
Ken K. asked if energy consumption was normalized for weather or other factors. Phil said that consumption is normalized for weather and also production levels where applicable.

Regarding the actions firms took during and after IEI, Ken C. asked if all firms did all activities. Phil said no, the list was examples from individual firms. Ken K. pointed out that a recycling program probably doesn't save energy; Fred said it indicates the pilot is having non-energy impacts as well. Debbie pointed out that lowering cubicle walls seems like a capital improvement, rather than purely behavior. Kim said that it was both; changing cubicles requires equipment, but also buy-in from the people in that space and it's a cultural change. IEI is also about training people to propose projects and follow-through with them. Energy Trust did not pay an incentive on cubicle wall changes.

Debbie asked about the amount of interaction between participant and PDCs before, during and after the pilot year. Kim said the PDC was there for the participant before the pilot and helped

recruit for IEI, then got involved after IEI for additional projects. Ken C. asked what the PDCs were looking for in potential participants. Kim said the PDCs were primarily looking for motivation and commitment to saving energy, sustainability or continuous improvement. IEI also works best when the company doesn't have major competing priorities at the same time (e.g., expansion, reorganization). Another important characteristic is a large firm with high energy consumption, although the program is now looking at how IEI can be rescaled to a slightly different product for smaller customers. Kim also said that the IEI contractor, Strategic Energy Group (SEG), now recruits the participants, whereas it was the PDCs in the first year.

Debbie noted that since IEI has run for several years, there are more people who can learn from each other than just the original 10 and we should get them together so they can learn from other cohorts.

Alan asked if IEI has a one year measure life. Fred said the measure life is currently three years and we plan to look at whether that is the right number. Alan asked for clarification that this was not a quantitative evaluation; Phil confirmed that it was not, but that in the first report (in 2010) we reviewed the MT&R results and determined that we can use that to determine savings impacts, rather than starting from scratch (for those firms that are still tracking energy savings). Alan said that IEI looks like a good program and asked how often Energy Trust plans to evaluate. Phil said that the impact evaluation will kick-off in January (as part of the PE program impact evaluation), and we will be evaluating all ITSP services, including Kaizen Blitz. We will eventually do site visits on a sample to check savings persistence and evaluate measure life, but we won't continue to do a report once a year.

Ken C. noted that another aspect that's interesting is why savings are there or not there; for example, what if the company loses its energy champion. Phil noted that this is why we want to check whether energy teams are still intact. Kim said that IEI requires them to have at least two champions (and up to 5), so if they lose one for any reason they can continue. The program also now offers IEI maintenance - another year of support to help with various circumstances - for little cost to the participant.

Ken K. asked how this pilot relates to NEEA's program (Continuous Energy Improvement, CEI). Kim said the difference is that NEEA didn't serve end-users; their CEI was built off Invinta and Energy Trust turned it into something broadly implementable. BPA is now using our IEI method and NEEA is out of CEI at this point, but looking into how to transform it into other offers, like software or working with association groups and executives.

Ken K. noted that two facilities received incentives prior to IEI, and asked how many have received incentives (for things other than IEI) now. Kim said that all participants have done capital projects with Energy Trust incentives now.

Ken K. wondered about 2.1 million kWh savings after IEI participation, and said that can't represent what all of them have done, but must be a "point in time" estimate. Phil noted that some projects are still in progress and take years to complete. Kim said that IEI has sites develop robust pipelines for future projects.

Debbie noted for Ken C. that the committee typically reviews draft reports and then they are finalized and put on the web, which takes a few months.

Ken C. said that since we have done 40 IEI participants now, have we started slicing to see what difference energy intensity or the type of products produced makes in the results? Phil said that all are pretty unique and the sample is still pretty small; we can look at management and philosophy, but not products at this point. Ken C. said his question is really about what is motivating people and whether it has to do with product or culture. Fred said that once we get more participants, we can see what types of firms aren't selecting into IEI.

Dan asked whether there are any big firms we want to work in IEI but haven't yet. Kim said cohorts have been easier and easier to fill, but there is still a broad range of corporate culture. Some of the big players are in survival mode and IEI isn't for everyone right now; we're trying to take them when they are ready. Debbie asked if any companies are holding out for confidentiality reasons. Kim said surprisingly no. Energy Trust has recruited IEI participants to speak at other events, and we're bringing all cohorts together next week to talk about how to stay engaged; most of the content of presentations is not highly technical so they aren't revealing much sensitive information. Participants get positive feedback about their efforts, so they are willing to share.

Ken K. asked if there is anything the board or the Evaluation Committee can do to help recruit participants. Kim said there are some firms the program is hoping to get into IEI, but they are engaging them in other offers until they are ready. Phil noted that for some firms with concerns, we are working with them individually, not in the group setting. For others though, it's good to have the perspectives of other industries. Kim said there are currently five companies in individual strategic energy management (SEM) and it is going well so far; many signed up for it because they are too far away for group meetings, not because of confidentiality. Alan agreed with the benefits of learning from others firms and industries and getting a different perspective.

2. Kaizen Blitz Pilot Evaluation

Contractor: Navigant Consulting

This is also the second report on the Kaizen Blitz (KB) pilot; the previous report completed a year ago, around the same time as the previous IEI report. Eight participants – three from the first cohort and five from the second – were interviewed.

Participation in KB involved an initial on-site tune up over the course of about a week to identify low or no-cost opportunities for savings. A report (about a month after the tune-up) documents energy saving opportunities in an action plan for the following year, and capital upgrade projects are also identified. The second cohort also received energy tracking software. Technical support is provided for a year to track and assist with action items and help develop an energy tracking system. A final inspection and report documenting actual energy savings is done after one year.

Motivating factors for, and value of, participation:

- Energy and cost savings
- Obtaining an outside opinion
- Getting a better understanding of facility operations
- Energy survey performed by Cascade
- Knowledge and experience shared by Cascade

Findings:

- Two of the three firms that recently received their report on saving opportunities were surprised about the level of energy use at their facility or for specific end-uses; all were confident that they could implement all or most of their action items within the given time
- One year after the tune-up:
  - Participants were able to implement the vast majority (80%-100%) of their action items
  - Two of the participants were able to implement all of their action items but one
  - Some still planned on implementing outstanding action items
  - Factors mentioned for not implementing: areas were “hands off” because of laws, safety, or best practices; skeptical of a given change; some savings opportunities did not apply
  - Participants reported Kaizen Blitz required anywhere from 10 to 30 percent of their time; responses varied based on the amount and complexity of action items each participant had to implement
  - Time frame was reasonable to complete action items
  - Some were able to implement most of their action items within three to six months

After one year, all feel they are maintaining their savings. Motivating factors for persistence include:

- A company-wide commitment to sustainability, “it’s the right thing to do”
- Staying competitive – “Reducing operation costs makes us more competitive”
- Less wear and tear on equipment
- Cost reduction and streamlining of energy costs
- Praise from management

Some have implemented new procedures to ensure savings are sustained; for example:

- Making it easier for employees to turn off unused equipment
- Automating equipment to turn off when not in use
- Incorporating practices learned from the Kaizen Blitz into daily routines and maintenance procedures
- Ensuring that all departments understand and support practices

All participants responded that KB was a success and that they were more likely to work with Energy Trust on other initiatives in the future. Cohort 2 participants were set up with an energy management software tool as part of the pilot. All reported that the software has been a useful tool for tracking energy use and savings. Thought the frequency of use varied, all plan to continue using it in the future.

Recommendations:

- Program should communicate time resources needed to implement actions (10%-30% of time) to establish realistic expectations
- Cascade should assist participants with paperwork required for their incentive
- The program should allow for follow-up support to ensure persistence
- Cascade should document participant best practices and participant solutions to issues to share with all participants
- Energy Trust or Cascade should consider commissioning enhancements to the tracking software

Energy Trust Take:

- KB has resulted in highly satisfied customers
- Pilot achieved significant savings that appear to persist over time
    - Cohort 1 had about 8 million kWh savings (4-10% of total consumption)
    - Cohort 2 has about 3.6 million kWh savings so far (3-18% of total consumption)
- Like IEI, KB-style services are being piloted in the Existing Buildings program

Group Discussion:
Phil noted that although many opportunities are low/no-cost, some O&M measures do cost money. Debbie tried to recall whether there was a 90 day requirement for implementing measures. Kim noted that was the 90-by-90 offer, a stand-alone measure for custom O&M measures, primarily for firms who just wanted to get something done quickly rather than participate in KB.

Ken C. and Alan wondered what difference participants saw between energy savings and cost savings (as motivating factors). Phil said that cost savings can include labor, chemicals, maintenance and other costs unrelated to energy. Kim noted some firms have energy goals and care about energy savings, some just care about cost savings.

Ken C. had trouble interpreting the statement that KB “required 10-30% of their time”; not sure who “they” are. Phil said it was mostly for O&M staff, and Kim added that the firms’ technicians did the real work. Tom asked if this was incremental time, or if it was filling existing time. Ken C. said it looked like they were doing things they weren’t doing before.

Alan said that since the KB incentive pays for staff time and measure costs, it is a very generous offering and wondered if it might be too generous. Kim said that getting participants to do things they aren’t already doing requires adding labor; we don’t pay for energy project managers, but we help offset a portion of the labor cost. Ken C. asked how that shows up on invoices. Kim said we track hours spent, know what the average hours should be, and only take unburdened labor rates (no mark up). Alan said that sounds reasonable, but is generous. Kim said we cap the incentive at 50% of cost; 90-by-90 was a special offer. It’s cheaper to pay in-house labor than to pay for the firm to hire a separate contractor to do O&M measures.

Alan asked what the assumed persistence (measure-life) was; Phil said that, like IEI, it was three years and we will evaluate whether that should change. Fred said it will take a few years to reach conclusions, especially if we extend the measure life and have to evaluate again. Ken C. said that we may get better persistence if we talk to them every year, but Phil said we won’t keep calling them yearly.

Fred noted that the first cohort was large scale refrigeration facilities and asked in newer participants are in other industries. Kim indicated some sites have large compressed air systems, but participants are still mainly refrigeration. Energy Trust has used slight variations on a theme for other firm companies; and we’re moving to “the rock” approach, which takes operators through peer training, but does a blitz at each site. Preliminary results look good.

Dan asked what the recognition systems used for IEI and KB are. Kim said that we do a final report to the company (management) to document what they did and how it mattered; we sometimes do case studies, recruit participants for other event speaking, and the governor’s award program (top 11 customers, happening in January). Dan said we need to reward technicians since they are the ones doing the hard work. Ken C. said that outside the Portland

area we should be getting things into local papers (Portland area is harder to get noticed in Oregonian). Kim said that Susan Jowaiszas does a great job of getting stories out to papers, even in Portland.

3. OPOWER 3-Month Survey Results

Contractor: Opinion Dynamics Corporation (ODC)

Phil presented results from the 3-month survey of participants in the OPOWER Personal Energy Report (PER) pilot. The survey was fielded in June with 200 respondents, after participants had received one or possibly two reports. PERs are delivered every two months. There has already been a 6-month survey conducted and a one-year survey will be fielded with both participants and customers in the control group.

The survey included questions about:

- Perceptions of the PERs
- Use of the PERs
- Awareness of energy use
- Actions taken before and after receiving reports
- Household characteristics

Phone numbers for participants were not available from utilities; ODC had to buy phone numbers for addresses, which limited the potential respondent base.

Findings:

- 63% of participants find the collaboration between Energy Trust and the utilities valuable
- Participants are reading the PERs in some detail
- Many participants are using the reports and discussing them with others in their household
- 78% of respondents feel they have a better understanding of their energy use after reading the PER
- 38% of respondents feel the reports provide new ways to save energy
- 66% of respondents felt the report detail was sufficient; 29% wanted more detail
- Average usefulness score (1-5 scale, with 5 being very useful)
    - Historical comparison: 3.7
    - Neighbor comparison: 3.3
    - Energy savings tips: 3.1
- Overall impression average score (1-5 scale, with 5 being excellent): 3.3
- Few participants are using the PER website provided
- Those who had not taken actions in the year prior to receiving the PERs were more likely to take action after receiving them

Group Discussion:

Ken C. asked for clarification on what respondents wanted more detail on. Phil said that the survey didn't ask specifically, but it's probably related to what they found least useful.

Ken K. asked if the respondents' suggestions for improvement were from open-ended or closed-ended questions; Phil said in this survey they were open-ended and we are converting them to be more closed-ended in the next surveys based on results.

Ken C. asked what was meant by “new information” (in the question that asked if they learned anything new). Phil said it is subjective, but important because people who said the info was new report taking more actions. So we don’t want to repeat tips in subsequent reports. Fred said people may be attracted to “novelty” of new tips, but that doesn’t mean they are any better (or more applicable) than old tips.

Dan asked if a participant goes to the website after seeing a report, are they going to a general page or an individualized page. Kate said the page is customized to Energy Trust branding and participants create an account for themselves so they can enter personalized information and improve the recommendations. Phil said the results show that those who go to the website take more actions and are more engaged with the reports.

Phil said that the 6-month survey asked about satisfaction with utilities separately (not in general). Fred asked if we know whether Energy Trust collaboration with the utilities made reports more credible to participants. Phil said that we did not ask about credibility, but Amber said that we have other research that indicates Energy Trust plus multiple utilities are more credible than a single utility.

Ken K. pointed out that the question that asked whether the report was “beneficial” is vague, and doesn’t seem very useful since we don’t know what about it was beneficial. Dan proposed that one benefit is combining electric and gas usage into one report. Fred said you could have a lot of interpretations of “beneficial”.

Dan disagreed with the conclusion that the impression of the report was high because the average rating was only 3.3 out of 5. Phil said there is room for improvement; there have been some negative feelings about the report. Ken K. said he knows of another utility that apparently only provided reports in certain sections of their service territory with already-highly satisfied customers.

Ken C. said that he didn’t see it in the report and wanted to know whether the respondent was ever asked what percent of their usage they thought they were saving. The question was not asked in this survey and Fred said they would not know. Sarah said that the question could be asked in the 1-year survey when the respondent had more time to process the reports. Kate said that the most recent results of billing analysis show 1.6% electric savings so far (compared to the control group), but there is conclusion on gas yet since the heating season has just started.

Alan said that he is somewhat skeptical of the PERs due to cost, and the savings being relatively small at the average household level; the reports may still provide other value, but it’s not certain. He is not sure how we would draw conclusions about continuing the effort right now. Phil said we will look at savings compared to the control group at the one year mark; we will also be dropping about 10,000 participants at some point to see if savings drop off. If people value the reports and it increases participation in programs, it may be worth the relationship building. Debbie asked if we are comparing participation in the treatment and control groups at the one year point. Phil said that we already looked at 3 months and there was no difference at that point. Ken K. noted that some utilities do it only for driving participation, and that’s why they just send it to some customers and not all. Phil said that we want to do a well designed random pilot first to learn more, and then we can change our methods.

Dan asked if the responses were anonymous or linked households (and savings). Phil said that since this is just 200 survey respondents, we haven't matched them to their bills; that would require a large sample.

Fred said that savings have trended up over the year so far; of the results held for all utility customers it adds up to about 20 aMW. Alan asked if that's cost-effective. Fred said that it would be cost-effective, but it also depends on the persistence of the savings and how quickly people go back to old habits. Tom said that savings must be net of any program participation. Ken K. added that we can't control for upstream programs in the savings results. His main recommendation for the next survey is to get more useful answers about "whether/how participants used the most recent PER," to determine if the first report was novel and additional ones are boring.

Ken C. asked what the customer complaints on the report were about. Phil said most who complained thought the PERs were inaccurate or judgmental, or had privacy concerns. Peter noted that some of that concern is legitimate since factors like family size, retirement or unemployment can affect results and aren't reflected in the comparison homes.

4. EPS Tool Comparison Study

Contractor: Stellar Processes

Phil presented results from the study of Energy Performance Score (EPS)-generating tools, conducted from January-December 2011. In 2008, Energy Trust commissioned a study of different EPS tool calculators which focused on estimating actual consumption. The EPS for new homes was introduced in 2008. In 2009, Oregon Senate Bill 79 created the EPSTaskforce to develop a standard for new and existing homes and commercial buildings. The US Department of Energy (USDOE) has developed a tool to provide a score to existing homes that Energy Trust piloted in early 2011, along with Energy Trust's own EPS tool.

The tools evaluated in the study were:

1. EnergyMeasure™HOME (EMH): Developed and owned by CSG
2. Home Energy Score (HES): developed by USDOE
3. Earth Advantage's Simple 2.0: Developed by Michael Blasnik and used by Earth Advantage Institute
4. Energy Savvy: Online home audit tool currently available on Energy Trust's website
5. Recurve: a modeling tool new to the Oregon market

These five tools were compared to SEEM, which is used by the Northwest Power and Conservation Council. SEEM was developed using regional housing types, climate zones and usage patterns. Three SEEM prototypes were used in this study to represent different characteristics and vintages, in three different climate zones and with 4 different heating systems (for a total of 36 combinations). Characteristics and usage from 35 actual gas heated homes were also run though the tools. Tools were compared only to SEEM, not to each other.

The goals of the current study were to:

- Determine if the different tools result in consistent and similar scores
- Determine if the scores are comparable with SEEM results
- Provide a recommendation of which tools should be considered by the program
- Provide recommendations for how the tools could be improved

If tools resulted in consistent and accurate EPSs, Energy Trust would be able to develop further criteria that could be used to select tools that could generate an EPS, such as:

- Cost/simplicity of data collection
- Cost of the software
- Upgrade cycle

Findings from the current tools:

- Homes with a heat pump score much better than those with a gas furnace ~~because of the efficiency of heat pump technology~~
- Weatherization and other energy efficiency measures make small individual improvements in EPS
- Tools provide similar EPS
- EMH under-predicts usage slightly for high-consumption homes
- HES tends to over-predict consumption, especially for heating
- Simple 2.0 is relatively accurate and unbiased although heating usage is less accurate
- Energy Savvy has less accuracy than others
- Recurve overestimates cooling and underestimated heating by a substantial amount
- Assumptions for appliances vary widely among the tools
- EMH ranked number one of the tools, followed by Simple 2.0 and Energy Savvy

Recommendations:

- Earth Advantage and EMH both provide reasonable EPS scores relative to SEEM
- Develop a standard set of assumptions for appliance energy use
- Need additional reference benchmarks for other climate zones and building types
- A fuel-blind rating would change the reference baseline depending on the fuel type

Group Discussion:
Peter said that the 2008 study showed that simpler tools were better than more complicated ones; even results for consumption from the simple models were +/- 30% of actual consumption. We wanted to see how they perform more in depth.

Alan said it sounds like we don't want to compare heat pump homes to gas heated homes. Phil agreed that we don't want to get into fuel choice issues. Fred said that in new homes, weatherization is so good that space heat is trivial, but that isn't true for existing homes. Peter said that these results make it look like fuel switching will reduce EPS and we need to figure out how to get a tool to compare only homes of the same fuel. Diane said the fuel switching/EPS conversation will be addressed in a public workshop in January.

Phil said there is a marketing challenge for existing homes EPS: how do we convince people to do energy efficiency improvements if they don't make a big impact on the EPS? Fred said we've already been wrestling with this. Debbie said that moving to a smaller house is one obvious way to change consumption or the EPS.

Phil noted that Energy Trust drove the evaluation of Energy Savvy in the study (Energy Savvy did not ask to be included for consideration); HES also isn't designed to issue an EPS, we just wanted to see if it would work. Diane said that HES can rank-order homes based on assets, but it doesn't use the metrics that we use (e.g., source vs. site based score, units of measurement).

Debbie asked how many different homes are in SEEM. Tom said the combinations of inputs result in an almost infinite number of homes. She asked how any were routinely used, and Tom responded that the three used in this study are what the RTF usually uses.

Diane noted that the HES tool has been improved since this analysis was done, and Phil said that was true of several of the tools. Tom added that they were looking at a revision of SEEM soon. Fred said the results show that for all programs fairly low cost data collection can have good results. Phil said the possible exception was Recurve, which while accurate at the overall level gets the end-uses wrong; if we didn't care if a model was based on building science, Recurve would be fine. But if we change the inputs or add new technologies, we want to be sure the results still hold up.

On the weights applied to factors by the contractor to rank the tools, Phil said we don't necessarily agree with weights, but overall results are the same ranking we would give. Fred said the top tools seem to be able to rank homes correctly even if they are close to each other.

Dan pointed out that there is a "do nothing" approach of requiring disclosure of utility bills, and measures installed at time of sale (rather than requiring EPS); we don't necessarily need all of this modeling. Fred said the goal of the modeling is to remove the occupant factor to get more comparable results. Peter reiterated the workshop on January 23rd to share results and discuss options; from his perspective, whether we need a tool to drive action is up for debate. There are lots of stakeholders and we want to share what we have learned.

Ken K. said the tool should consider all electric options versus other electric, not gas. Heat pumps are an efficiency improvement option and by themselves would score higher than a forced air furnace or zonal system. Fred added that if this is a tool for real estate use, we can't only compare gas to gas and electric to electric. Ken K. said the size of the house will also make a big difference in the score. Diane said the revised EPS will give a number, plus estimated annual and monthly electric and gas costs, and is being visually redesigned. She said the recommendations report has the valuable consumer information; the score will be a mechanism more for real estate issues. Peter said that Energy Trust is open to stepping back and not pushing EPS hard. Fred said that we do want to help others use something vaguely meaningful if they are determined to require an EPS.

The meeting adjourned at 1:45pm.

The next meeting will be scheduled for late February or March.