Evaluation Committee Meeting

August 23, 2012 10:00am-1:00pm

Attendees

Debbie Kitchin, Board Member – Committee Chair
Alan Meyer, Board Member
Phil Degens, Evaluation Manager
Dan Rubado, Evaluation Project Manager
Erika Kociolek, Evaluation Project Manager
Sarah Castor, Evaluation Sr. Project Manager
Jackie Goss, Planning Engineer
Ted Light, Planning Project manager
Paul Sklar, Planning Engineer
Tom Eckman, Northwest Power and Conservation Council, Expert Outside Reviewer
Ken Keating, Expert Outside Reviewer
Anne Root, Board Member (via phone)
Dave Slavensky, Board Member
Steve Lacey, Director of Operations
Kate Scott, Residential Project Manager
Rachael Brown, Customer Relations and Marketing Manager
Peter West, Director of Energy Programs
Sue Fletcher, Communications and Customer Service Senior Manager
Tom Beverly, Trade Ally Network Manager
Ashley Jackson, Trade Ally Coordinator
Fred Gordon, Director of Planning and Evaluation

Agenda

1. Lighting Shelf Space Survey
2. Clothes Washer Market Transformation
3. NEEA Gas Savings Report
4. 1-Year Opower Survey
5. 2012 Trade Ally Survey

1. Lighting Shelf Space Survey Presented By: Phil Degens

The 4th annual lighting shelf space was done by DNV KEMA Consulting from December 2011 to January 2012. KEMA worked with NEEA on the regional lighting shelf space survey to bump up the sample size for Oregon. The goal for the analysis was to monitor the general Oregon lighting market for availability, diversity and pricing of consumer lighting products. It also served to gain intelligence the market for specialty bulbs and LED lighting products in the Oregon market. Another objective was to check in on the general purpose lighting market to see if there have been any changes. This will help Energy Trust determine if the decision to pull out of the general purpose lighting market was a good one. It will also allow us to measure the effect of new Federal lighting standards.

Alan asked what we do with this information since we are no longer involved in the lighting market. Phil responded that we do provide upstream incentives for specialty bulbs. Energy Trust currently has an incentive for LED can lights. Paul added that we haven't seen big changes in the lighting market yet, but we probably will next year.

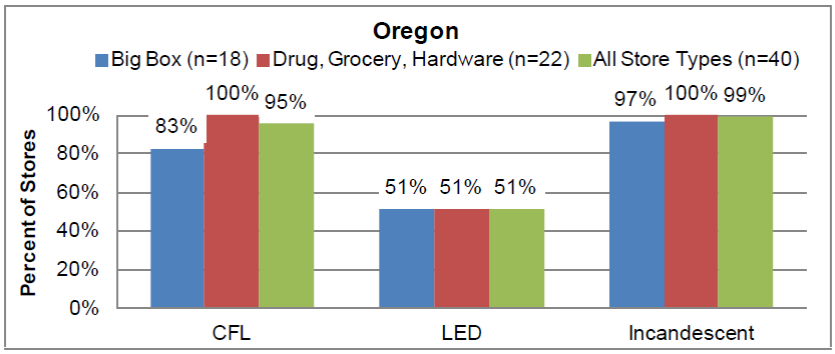
Alan asked if information from this study influences the measures that we offer. Phil responded that yes, it does impact our decisions on which lighting products to support with incentives. Ken responded that it also affects what the savings are because the survey results help establish the market baseline. Often times we make big assumptions about market conditions and behavior, but this survey gives us important information. It is a cheap way to collect information rather than getting sales data or looking at what type of lighting is installed in peoples' homes. Lighting programs in general are nervous about coming changes in the lighting market because it represents such a large proportion of energy efficiency portfolios.

Alan asked if the survey results influence the savings that we claim. Phil responded yes. And NEEA also will claim some of the market transformation savings, but it does impacts us and what we claim. The other big reason for doing the survey was that we wanted a representative sample for Oregon in addition to NEEA's regional sample. Ken added that we want to track the LED market as well. It is changing very fast, but is still dominated by a few products, like those sold at Costco. Phil said that market data can indicate if something is changing. The importance of these studies also goes beyond Oregon and we can present results at national venues.

Energy Trust paid for an additional 20 site visits for the Oregon sample of the NEEA study, bringing the total up to 40 stores. These included whole sale clubs, big box mass merchandise and do-it-yourself stores, hardware, grocery, and drug stores.

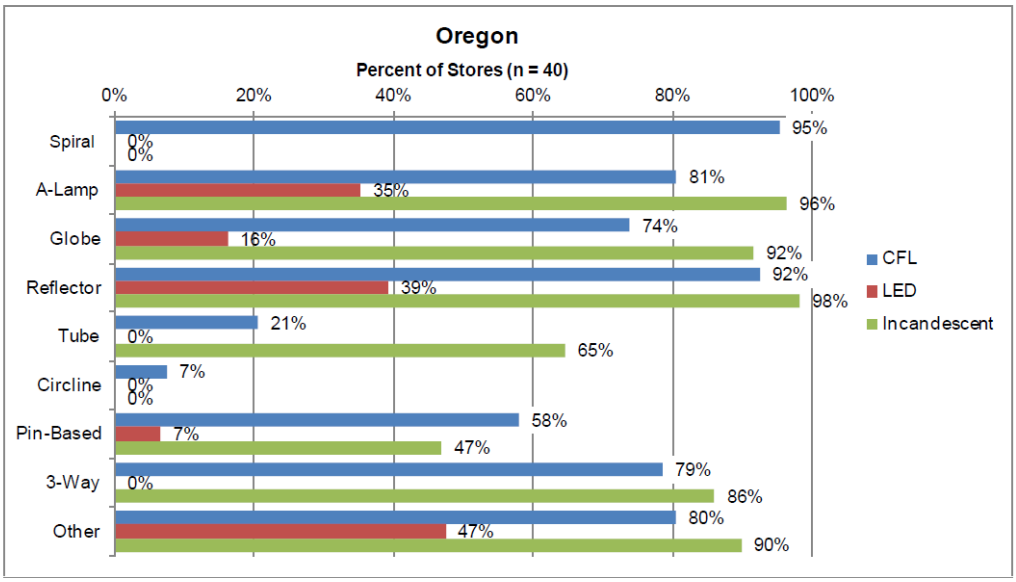
About half of stores were selling some type of LED and most were selling CFLs. The percentages by store type are shown in the following chart.

Percentage of Stores Carrying Lamps by Technology and Store Category
All Lamp Styles – Oregon and Northwest Region, 2011-2012



Types of lamps sold are summarized in the following chart.

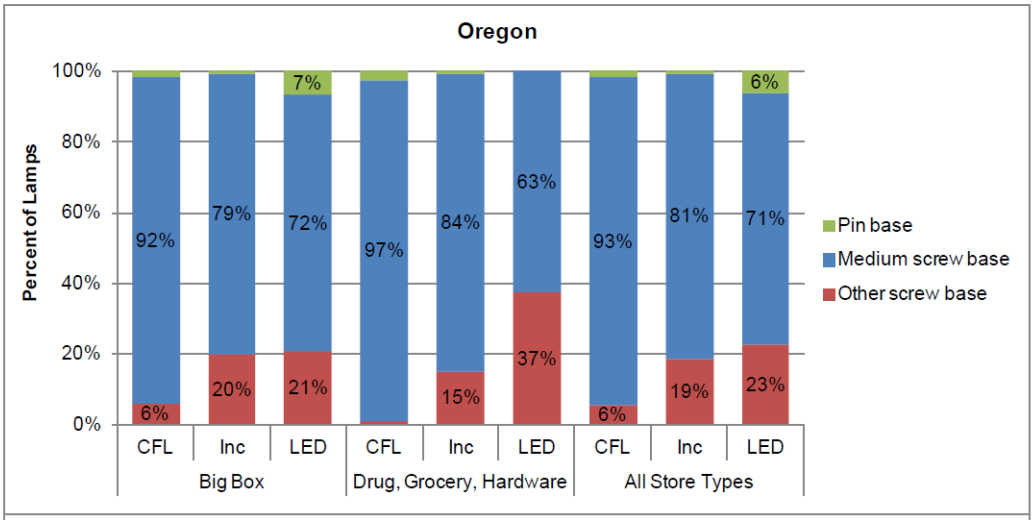
Percentage of Stores Carrying Lamps by Technology, Store Category and Detailed Lamp Style – Oregon and Northwest Region, 2011-2012



One of the concerns with the new Federal lighting standards, from the Energy Independence and Security Act (EISA), is that stores will start stocking unusual bulb types that aren't regulated by EISA to avoid the efficiency standards. That doesn't seem to have happened yet.

We were also interested in seeing what types of "other screw base lamps" are out there and what portion of the market this represents by technology. Generally this category includes flame tip lamps. For incandescent, the flame tips aren't a huge portion of the market, but we are looking for market niches. For CFLs, small screw base is not there as much, difficult to make small with ballast. The following chart shows the prevalence of different lamp base styles by store category.

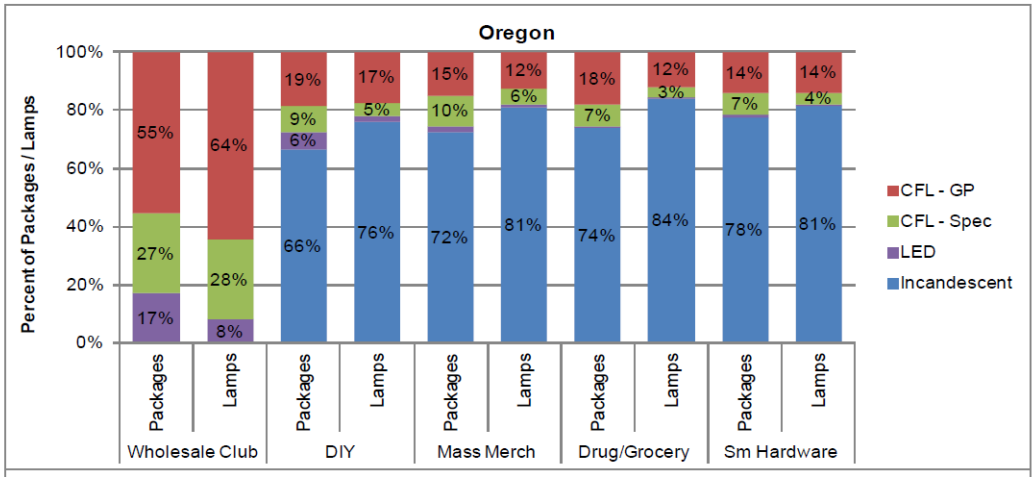
Percentage of Packages and Lamps Observed by Technology, Store Category, and Lamp Style Category – Oregon and Northwest Region, 2011-2012*



Wholesale clubs are not selling incandescent bulbs at all, only the higher margin items. However, the way they counted things at wholesale clubs was a little different than other stores. In wholesale clubs, every box that was in warehouse was counted and in other stores, only

those that were on display were counted. The following chart shows the relative prevalence of different technologies in different store types.

Percentage of Packages and Lamps Observed by Technology, Store Type, and Lamp Style Category – Oregon and Northwest Region, 2011-2012*



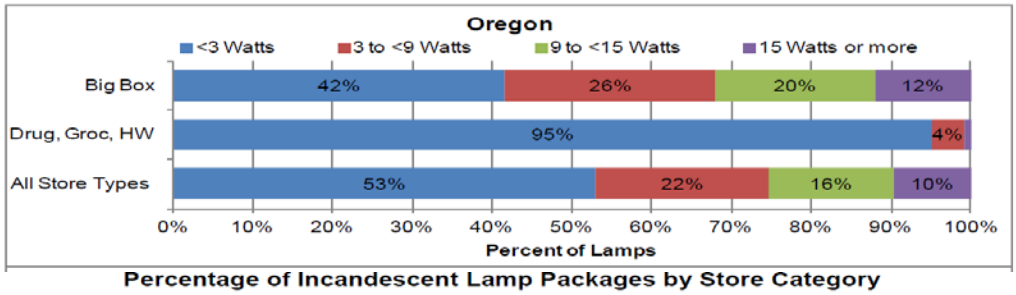
Ken asked how LEDs were defined. Are these holiday lights, decorative lights or general purpose bulbs? Phil responded that they could be anything, so it is interesting to look at the breakdown by different wattages, which gives us an idea of the types of LEDs stocked.

The EISA standard change is the death of 100 watt bulb. It took effect January 1, 2012. In this study, only 3% of stocked incandescent lamps met the EISA standards. This is a manufacturing standard, so there is an inventory lag here. It takes a while to move the old inventory out. Ken commented that because of the short measure life of incandescent bulbs, this is a self limiting problem.

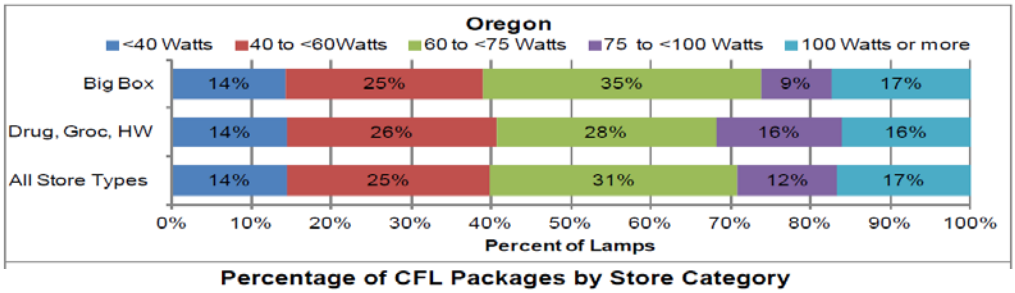
Phil continued, stating that the EISA standard has yet to have an impact, but it will have a large one when it does happen. We don't know yet if there are certain incandescent products that meet the standard that will become the most prevalent lamps in this class or if CFLs will take over and fill the void. We found that stores are stocking a large diversity of CFL and incandescent lamp models, but not much diversity in LEDs.

The following figures show lamp packages available by wattage category. The different color bands show roughly equivalent lumen outputs across technology type. Almost all LEDs are less than 3 watts. This wattage category consists mostly of night lights and decorative lights. There may be some low wattage specialty LED lamps in this category as well, such as art spot lights. The products available in the LED area are very limited, overall. We need to look at lumens per watt here. This is increasing rapidly in LEDs. Currently we need to have more LED products in the 9-15 watt range to replace 60-75 watt incandescent lamps. If you look at CFL packages, there are enough in the higher wattage ranges to replace incandescent bulbs. 13-19 watt CFLs replace the lumen output of 40-60 watt incandescents. There are enough CFL products out there to replace these incandescent bulbs.

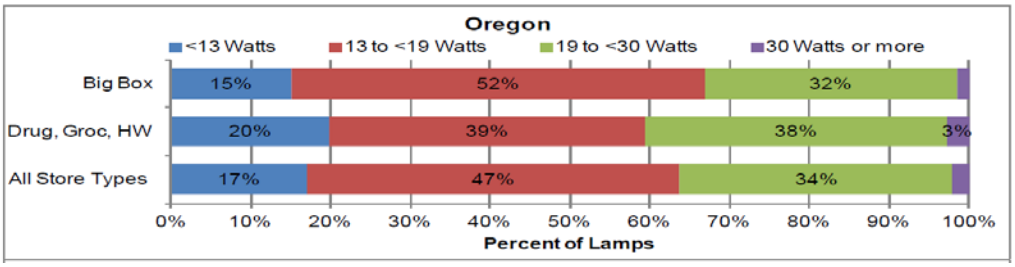
Percentage of LED Lamp Packages by Store Category and Wattage Category – Oregon and Northwest Region, 2011-2012*



Percentage of Incandescent Lamp Packages by Store Category and Wattage Category – Oregon and Northwest Region, 2011-2012*

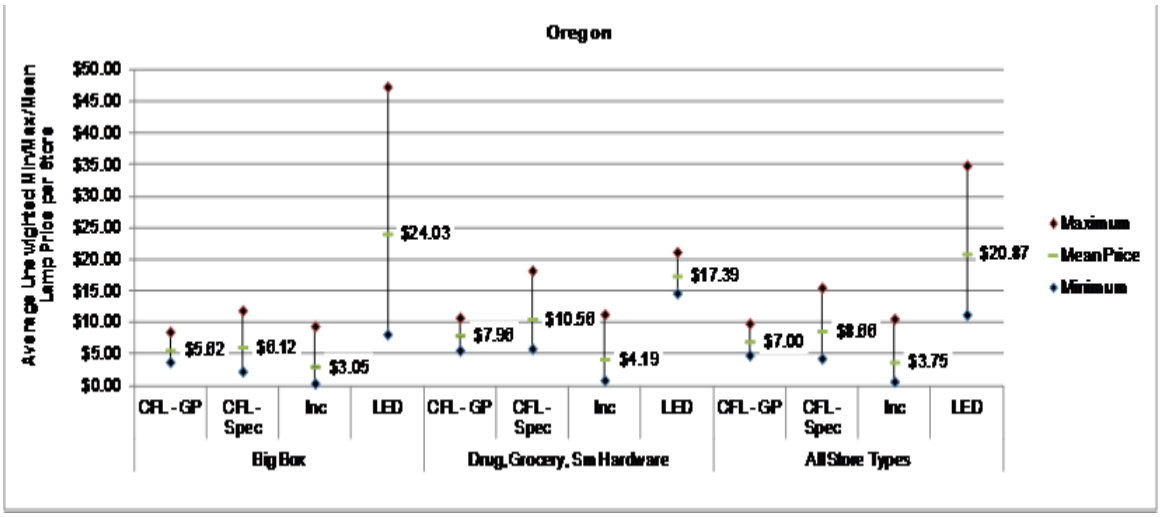


Percentage of CFL Packages by Store Category and Wattage Category – Oregon and Northwest Region, 2011-2012*



The message from the next slide is that if you want to get a cheap bulb, go to a big box store. They are more expensive at smaller stores and specialty shops. The average price for general purpose CFLs was $3.22 in big box stores and $5.71 in drug, grocery and hardware stores with an overall average of $3.41. Specialty bulbs are particularly expensive at grocery, drug and hardware stores with an average of $10.70 compared with an average of $5.65 at big box stores. CFL prices have gone down in big box stores since 2010 while they have gone up in other stores across the Northwest. Oregon has the lowest prices in Northwest region. This is good news and it tells us that our pull back from the CFL program has not adversely affected prices in the market.

We also looked at the prices for all lighting products out there. These data were provided as un-weighted numbers but they give us a pretty good idea of what prices look like in the market. The price of LEDs is much higher than CFLs with an average of $24 per lamp. I still remember looking in stores 15 years ago and large CFL bulbs were going for around $40. So this is to be expected for LEDs. Fixture prices have gone down 24% over last two years. Chip costs are down to 20-30% of the total cost of the manufacturing LEDs now. The costs are primarily in the housing, controls, the heat sink, etc. Paul commented that the incandescent prices in the chart below seem a little high.



In conclusion, lamp availability was similar in Oregon to the Northwest overall. Incandescent lamps dominated most stores. LEDs were not present in about half of stores. The availability of lamps that meet the EISA standards is low at this point. CFLs and incandescents had a similar diversity of lamp styles while LEDs were much less diverse. CFLs average about $3.67 now, down about 40 cents since 2010. Much lower prices in can be found for CFLs in big box stores.

Alan asked why CFLs are cheaper in big box stores. Debbie said that they can charge more at more convenience types of locations like grocery stores. Phil added that they are selling large volumes at club stores and other big boxes, which brings down the price. Alan commented that people can now go out and look for bulbs and shop around because they are not replacing them very often.

Alan then asked about EISA compliance of bulbs in California. Ken responded that studies in California found that change was slow at first. What we saw here is to be expected because it is still early.

Fred said that he was seeing reports that lots of bulbs were trying to get around the EISA regulations in CA. Ken responded that CA has 12 times Oregon's population. He went on to say that the striking findings are that the lumens per watt for LEDs are no better than CFLs at this point. We are betting on the future for LEDs. Right now they are a more flexible product but no more efficient than CFLs. Fred said that Energy Trust has stayed out of the LED market so far except for a few specialty fixtures.

Dave said that a colleague sent him a video of a study of CFL life based on different usage patterns. The life of CFL lamps was much shorter in real life usage scenarios than the labels stated. Phil responded that there are lots of poor applications for CFLs. Recessed cans and other conditions cause the ballasts to get too hot and shorten their lifetime. Dave said that there should be instructions about which bulbs to put where. If we're trying to influence behavior and the measures are not effective or don't last as long as labeled, then it's not working and people will get frustrated. Ken responded that lots of lab tests have been done on CFLs and in some scenarios there was a lot of degradation. Better packaging could help with warnings that tell consumers not to put CFLs in insulated areas. That hasn't been passed on though and consumers need to be educated. In the early 2000s we had some bad product. Lights would start smoking in some instances. Then bulbs were redesigned to perform better in hot environments. But there are always some shoddy products coming to market.

Tom said that we account for failures in the measure life of CFLs. Fred added that in the next true-up we are knocking off several average megawatts of load based on the realized life of

CFLs. He asked if you can really train consumers to differentiate products though. Dave responded that if the bulbs aren't lasting, then the environment is suffering from more use, because they require more resources to produce. Steve responded that that is good for manufacturers. Fred said that in the Energy Star spec they have good testing for output and longevity. In terms of environmental impacts, there is good information on the Energy Star and ETO websites and comparisons with the impacts of the use of incandescents. These are very favorable for CFLs.

Ken asked about LEDs containing gallium arsenide and other heavy metals. Fred responded that life cycle studies have shown that if they last longer, LEDs look better from an environmental standpoint, even with the toxic materials. Alan said that there aren't the gaseous effluents to worry about in LEDs.

Energy Trust's take on the shelf space survey:
EISA impacts have yet to occur. There is a lot of lighting savings still to be realized. CFLs are cheaper in Oregon than the rest of the region. ETO reduced focus on CFLS and there was no negative consequence in the market. LED lamps are available mostly in low lumen products. Opportunity will arise when there are more products with equivalent lumen levels to incandescent.

2. Residential Clothes Washer Market Transformation Study Presented By: Ted Light

Project background: The project began in the fall of 2011. The intent was to study the residential clothes washer market. We worked with Navigant Consulting. A tiered approach was used, starting with a low efficiency tier with the option of adding additional tiers later. We wanted to consider NEEAs previous work in this area. The NEEA clothes washer initiative ended in 2007 when the standard changed. NEEA didn't promote washers with a Modified Efficiency Factor (MEF) above 1.8. In this study, we looked at washers with a MEF of 2.0 and above. The MEF refers to the cubic feet of clothes washed per kilowatt hour used.

The research questions were: 1. did Energy Trust's program influence equipment available in market? 2. Did Energy Trust influence sales of high efficiency washers? 3. Did Energy Trust influence supply chain promotion or market acceptance? 4. How much market transformation can be attributed to Energy Trust? 5. Were Energy Trust and its peers influential on the federal efficiency standard?

We were able to quantify the total size of the Oregon clothes washer market as summarized in the following table.

Table 2. Estimated Total Market Size for Oregon

Year	Number of Automatic Washer Sales
2004	102,000
2005	101,762
2006	106,471
2007	118,189
2008	137,555
2009	145,862
2010	155,100

We couldn't find Oregon-specific data for the efficiency level of washers sold. However, we know that ETO provides 20,000 washer incentives per year for MEF 2.0+ washers. State tax credit numbers are pretty close to this as well.

Phil said that we could use NEEA's Residential Building Stock Assessment data to analyze the efficiency level of washers in homes. Dave asked if these numbers represented unit sales. Ted responded that yes, they did. Dave asked if there was a secondary market out there for used machines. He said there are companies out there buying and refurbishing these machines and the efficiency is stuck at the same level. Fred responded that we haven't done extensive baseline market research so we don't know. Alan asked what the market saturation of 20 year old washers is in homes. Tom responded that the RBSA has washer baseline numbers by age of machine, but he didn't know these figures off hand.

During interviews, we encountered difficulty finding the right person to interview within the supply chain. In store salespeople helped us understand drivers for sales but they didn't know anything about market share. This gave us qualitative information, but no quantitative sales data on market share. We contacted regional store reps, but haven't been able to get any sales data from stores.

Retail sales person interviews revealed the following. They all expected that sales for high efficiency washers would decrease based on changes to incentives and tax credits and that they would have to stock more of the cheaper, inefficient models if the rebates on more expensive ones decreased. PECI said that stores will mostly be stocking the models that qualify for incentives. Both of these sources of information suggest that incentives are driving the market. However, Fast Feedback free ridership results suggest that without the incentive, many consumers would likely have bought the same model of washer. In conclusion, qualitative interview results suggest that the market has not yet been transformed, but it is difficult to put these findings together with the Fast Feedback results. We are still unable to get retail sales data, which would be a good additional point of comparison. So, there are no identifiable market transformation savings at this time.

Alan said that the results are very confusing. On the one hand there are lots of free riders, but retailers say that the market relies on incentives and is not transformed. Which is it? Fred responded that we don't know. Debbie asked when the Federal standard change for washers comes into effect. Ted said that the Federal standards were finalized towards end of May and that they will take effect in 2014. Tom said that there is a water factor associated with the standard and an MEF of 2.0.

Debbie asked if the standard change has a program impact. Fred answered no, but we are looking at attribution of 1.8 to 2.0 MEF machines. We want to know if this shift is due to ETO or the standards. Our market has historically moved very fast and is a dynamic environment. There is circumstantial evidence that we are doing good. We are getting equipment stocked and sold and people think they are doing it all on their own. The market is shifting faster than expected because of us. But market transformation is difficult to pin down. We may need to back away from the details to a broader level. Using these empirical tools doesn't seem to be working to get us a clear answer. We may have to pull out of washers but we view it as a market transformation effort right now.

Dave said that we may not be transforming the market, there is mixed evidence. Tom added that because the standards for all products are going to be ratcheting up, this will cause attribution problems. Fred said that we need a way to get evidence to show that we are doing something. He suggested that we might need to regionalize evidence gathering, coordinating with NEEA. Phil asked what types of models are being stocked. We could go into stores and look, using Mystery Shoppers. With windows, the only products stocked were Energy Star, so

consumers had no real choice at the point of sale. So, they thought they were making the choice, even though their choice had already been influenced. Sales people are also trying to sell higher priced products and influencing customers.

Fred said we can run the program just fine, but having trouble with attribution and data collection. Peter asked how we test the attribution of sales to Energy Trust if we influenced the stocking of products. Phil said the RBSA would be a good place to take a first look to see what the saturation of efficient washers is. This could be used as a proxy in place of sales. We could answer what types of machines have been installed in the Northwest. The RBSA data is supposed to be updated on a regular basis, so it will be a good way to monitor trends. Peter said that we don't have enough of a delta among states in the region to gauge the market baseline. We need to compare Oregon with some southern state where they do nothing. Phil responded that he has a hard time spending money to research the market in some other state. KEMA has spent millions of California's money studying other states. We don't want to do that. We want to spend our money finding out more about the market in Oregon. Ted added that we could do a baseline comparison using national averages. National data are readily available and relatively cheap to come by.

Ken said that if you can't get sales data in Oregon, it will be hard in Missouri or some other state as well, so it might not even be feasible to do a comparison with another state. Tom said that not being able to get sales data is an issue we've been having a problem with. We do have distributor sales data down to the zip code level from national data. We just need money to get the data that we want. It is really just a data query that might take less than hour to do, but it might take a lot of money to get it to happen. We are trying to find the right person in these organizations to cut the deal. Fred suggested that we get together with the other regional energy efficiency organizations to make this happen. Dave asked who that would include. Tom answered with a few examples including the American Association of Appliance Manufacturers. Dave asked what the manufacturers were planning for future capacity.

Debbie stated that from although there is a lot of value in the data we get from Fast Feedback and other sources we also have to recognize that people are biased. People remember don't remember things exactly when we ask them to recreate the past, including past purchasing decisions. But we are using that type of data to assess free ridership and other things, and it is kind of mushy stuff. What salespeople and customers said in this study doesn't align. This is probably happening elsewhere as well, but it is just especially stark here.

Alan said that if this is just a 2-3 yr problem, then spending years to research it is irrelevant. Otherwise, the standards will go into effect and change things and we still won't know anything. Fred added that we can try retailers and other sources of information that we haven't tried to look at yet. Peter commented that he thought it was a question of methods to him. He explained that if you're upstream influencing decisions, perhaps it's not appropriate to use Fast Feedback to assess the impact downstream. It may be a methodological problem. Sarah responded that she doesn't necessarily believe the absolute level of free ridership from Fast Feedback, but she does believe the trends. And free ridership in washers has been very stable. Peter responded that it's a good tool, but in some places it doesn't get what we want. In this instance, the logic of delivery precludes even the trend from being very meaningful. You can't ask me to recreate why I bought a washing machine. Alan added that if you really changed what is in front of the customer enough then they may not have a real choice in what they purchase. He believes that we haven't changed everything, but instead have shifted it a little. There is more efficient equipment out there because of us, but they still have stuff at the low end. Sales in stores will tell you this.

Debbie said that we just a small sample of our customers that purchased washers are represented in Fast Feedback. Fred commented that the discussion demonstrated the

difference between ETO and other efficiency programs around the country. Since Energy Trust is not trying to make a profit, we can have this conversation about data. Ted said that we just don't have enough data to book any savings from market transformation yet. Peter asked if NEEA was going to do a regional look at clothes washer market transformation.

3. NEEA Gas Market Transformation Presented By: Ted Light

Background: NEEA is funded by utilities to achieve regional market transformation and electric savings. Some initiatives also achieve gas savings incidentally. Examples are residential windows and Industrial Strategic Energy Management. Energy Trust wanted to quantify and analyze any unclaimed gas savings and market transformation savings resulting from NEEAs work in Energy Trust territory that Energy Trust could claim towards its goals. In 2010, Energy Trust hired Fluid Market Strategies to do a first look at this. There were potential gas savings from residential initiatives as well as commercial and industrial savings from NEEA. We wanted to look at commercial and industrial customers closely to make sure we didn't claim savings at sites that were gas transport customers.

Fluid was rehired for a second phase. We used a two part criteria to claim savings. Sites had to be in ETO territory at a time when there was an ETO program to serve that type of customer.

Alan asked why we had to have a program in place to claim savings since we fund NEEA and they had a program in place to serve those customers. Ted responded that our goals for NWN are for specific types of accounts. We can't do transport customers or interruptible service sites. If NEEA achieves savings at those sites, we can't claim the savings. Fred said that the criteria imposed were intended to select only customers that we had a mandate to serve in order for us to claim any savings. If NEEA accidentally got savings for some customer that we don't have a mandate to serve, then nobody is claiming those savings.

As a result of looking at each site, we had to exclude all industrial sites in Oregon due to being on transport gas account. In commercial sites, we identified 356,000 therms of savings. However, one site claimed 95% of the total commercial savings amount and that site had participated in New Buildings program. So, those savings had already been claimed. Another couple NEEA sites were simultaneously involved in the New Buildings program. We concluded that nearly all the NEEA commercial gas savings had been claimed by ETO already through the New Buildings program. Only a trivial amount of savings was not claimed. ETO won't bother to claim them. It is not worth the effort. Information was shared with NEEA on data tracking. When Fluid was looking at sites, we wanted to know that all savings had been evaluated so that we could be confident in them.

Fred said that NEEA won't spend much money looking at gas savings. Ted said that going from the data available on sites from NEEA to the gas accounts for those sites was difficult. We couldn't always link them together. Fred said that it was not an expensive study, we were basically just checking in with people. Because we have cumulative savings goals, we spend a little time and money to occasionally look at savings that occurred in the past so that we can claim them.

Fred asked: what does the board think about doing this type of looking back? Alan responded that it makes sense to look at this to make sure if there were savings. Dave asked how it benefits us to true up and change the past. Fred said that we do an annual true up where we look at all the evaluations and fix things back several years. It impacts our work towards cumulative goals over time. It also has an impact on the strategic plan and meeting our goals.

Fred asked again if we should continue to do projects that look at gas spillover in the past. Alan said that it is good to balance true up to have spillover as well as reductions in savings. Debbie

asked if we could have an automated process to bring in these types of savings when the projects are happening instead of doing a cast back. Fred said that NEEA has worked hard to produce an annual report and compare building lists with everyone else to net out overlapping sites. Their reports can be used in this way.

4. <u>1-year Opower Survey</u> Presented By: Phil Degens

We're presenting the third of three reports on Opower. As a reminder, Opower is a pilot project. It involves 60,000 randomly selected gas and electric customers that receive a personal energy report (PER). 60,000 are in a control group. PERs are intended to induce participants to undertake energy efficiency and conservation activities at home. Energy Trust has contracted with Opower to deliver this service for an additional year. Energy Trust is currently considering what direction to take once the current contract ends.

The PER includes various modules, including neighbor comparison, tips, and a personal comparison (your current usage compared to previous months). It's a repackaging of information you already get on your utility bills, although the neighbor comparison and tips aren't included.

Opinion Dynamics was hired to do the evaluation. In June 2011, did participant survey (N = 200); October 2011, 6 month survey of participants (N = 200); and March 2012, did participant and control survey (N = 250 for each group).

We have categorized the communications (phone and e-mail) received about the PER from January 24, 2011 to March 9, 2012. Some were conversations about energy use (31%), opt-out requests (29%, although total opt-out requests from all sources are 0.6% of treatment group), general feedback, complaints (but not opt-out) and some opt-in requests (although we don't currently allow people to opt-in).

Alan asked if there is a clear way to opt-out (through phone or e-mail). Phil responded yes, although we are trying to make it easier for folks to opt-out. One idea is to have a perforated postcard to announce you can opt-out in the future. If the Opower effort expands, we want to make this process clearer for people that don't want this service.

Dave asked if PERs are paper or electronic. Rachael responded that all reports were distributed via paper. If customers want, they can opt into receiving it electronically.

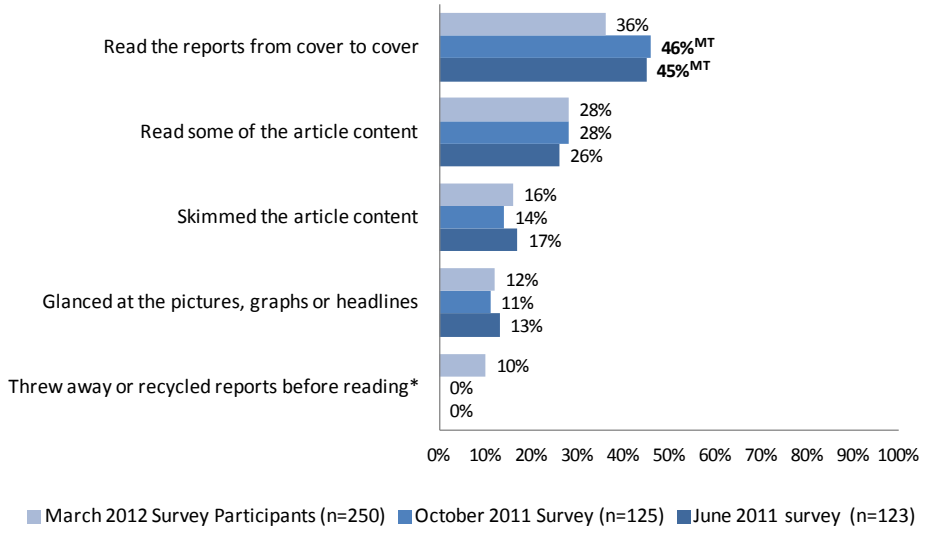
Alan noted that he's heard from people getting the PER that "it's in color, printed out, must be expensive – why is money being spent on this?" Phil responded that we want to get this to people who see value in it and want to receive it.

The third survey is focused on how PER recipients differed from the control group and in particular, their awareness and knowledge of energy use, energy efficiency actions, and use of the PER by recipients. We asked about folks' satisfaction with utilities. We asked half of surveyed folks how satisfied they were with electric utility services and half about satisfaction with gas utility services. This was incorrectly noted in the report. For NW Natural, there was no difference between groups and for PGE 86% of control said satisfaction was 4 or 5 on a 5 point scale compared to 93% for PER recipients. This difference was not statistically significant. With such high levels of satisfaction, it is hard to figure out differences between these groups unless the sample size is much larger.

We asked folks what part of the PERs was most useful. The neighbor comparison module and comparison to usage in the past were the top two. Tips need more work (18% said they were

useful). We asked about what information could be added to PER to make it more useful. 16% said nothing, 10% said more tips, and 53% don't know what would be more helpful.

Also asked about customer interaction with PER, which is summarized in the figure below. Added a question about throwing away for recycling reports before reading – 10% of folks don't find much value because they are getting rid of the PERs before reading them. Reading report cover to cover is down to a third from 46% previously. This is to be expected given they have been getting reports for one year. Another third read some of the article content.



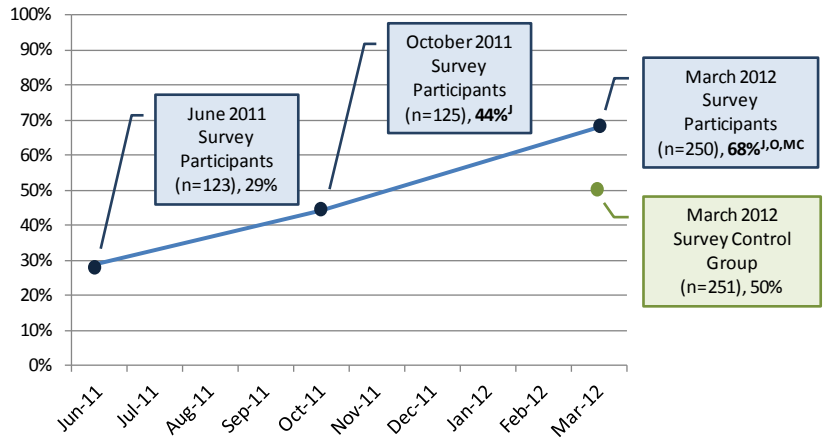
Fred asked if the groups being surveyed are different each time. Phil responded yes. One of the questions asked at the last meeting was, how many people didn't know about report when called?Phil asked Opinion Dynamics about that and they responded that they couldn't really tell because the call lists were reverse directories and it was unclear if the reverse directory was leading them to the wrong household or not. They had to ask screening questions to make sure they had the right household.

Customer use of PER has decreased over time: fewer people are showing them to others, discussing reports with others, and saving them for reference. Again, this is what we would expect over time as people get familiar with the reports.

Asked participants about future use of PER; 1/3 said they would use them to help reduce energy use. Two numbers are concerning: 22% say they will not use and 12% don't know. Glass half empty view is 1/3 of respondents reported they are not going to be using this actively, and glass half full view is 2/3 will actively use in the coming year. Savings we are getting from Opower have been rising over time; right now they are 1.8% for electric and gas has gone up as well.

Participants reported seeking information about energy efficiency more than has been reported in previous surveys. Both participants and people in the control group have sought information over the past year at almost equal levels. PER group used newspapers more (statistically significant difference) and community events. Control group looked more at bill inserts than participants.

We asked about actions taken to reduce energy consumption which is summarized in the following chard; this has risen for participants. About 70% said they had taken some sort of action to reduce energy consumption over past year, much higher than control group (50%).



For the most part, the two groups took similar actions, but PER recipients have taken more of them. PER recipients unplug appliances more whereas the control group installed windows/doors more. 21% of control group reported installing windows/doors – this number didn't align with Census numbers (on average, percentage of folks replacing windows and doors annually is just under 10% from Census). 21% seems high.

When asked about their plans to reduce energy use in the next year, participants seem to have done a lot of stuff they planned to do, although this is still higher than control group (27%).

Alan expressed concern about language in the report, namely the characterization of a 34% difference as "slight" whereas a 27% difference was interpreted as "significant." It seems like a bias is built into that. Phil noted he will take that into consideration but the takeaway is still the same: that a large portion of participants have done many of things they were planning to do.

Analysis on participation in Energy Trust programs was included in the report but done in-house by intern Ryan Eddings. Ryan looked at Opower participants to see what type of "bump," if any, our programs received. Looked like PER recipients participated at 8% higher rate. Doesn't look like number of measures, incentives, or level of savings was different from control group; just the number of participants was different. If we take the 1.4 percentage point difference between the control and participant group and then multiply by therms and kWh saved, get 300,000 kwh and 9,000 therms.

We are using savings numbers from Opower. Every time folks have replicated Opower studies, they get comparable savings. Currently using Opower savings until we get billing analysis done. Tom commented that when the billing analysis is complete, it would be useful to look at Puget Sound Energy's (PSE) study. Their results showed significant skew: high usage participants save a lot, low-usage ones don't. If we target people to participate in the program, we should look at initial bills. Fred responded that as we look into cost-effectiveness issues as an organization, it is important to consider Opower as a tool to reach people we don't ordinarily reach.

Tom noted that if we aren't driving participants to the program in a significant way, targeting makes sense and it will be a better use of money. The top quartile of PER recipients in PSE accounted for 85% of savings – so we could spend 25% of the cost to get 85% of savings.

Phil responded that we should be trying to do more of that for programs. Average savings are pulling down cost-effectiveness of measures. To bring up average savings, could focus on top quartile of users; identify and better target them. Going into a home with 300 therms of consumption versus a home with 1,000 therms that could have 300 therms of savings opportunities is something we need to consider, especially in terms of gas programs. Debbie commented that there is a difference between targeting and not making measures available to

everyone. It's not inconsistent to try to reach people we haven't reached before and still target opportunities for savings.

Ken commented that our billing analysis is showing a 1.8% difference. Of that 1.8% difference, 0.5% is due to program participation, meaning that we've already booked those savings. The next adjustment that has to happen is differences in participation in upstream programs, but to do that is expensive.

Phil noted that at first, Opower did suggest targeting large consumers, but we said this is a pilot and we want to find out what savings look like for a broad range of folks. Tom advised that in subsequent evaluations, we look at things by quartile or decile to ensure a complete picture and to see whether participants in programs tend of be in one group or another.

Recommendations are to identify mechanisms to push participants to continue to take and plan actions, to keep information new to maintain high levels of readership, customize information by household, and consider ways to encourage customers who are not using reports to opt-out.

Alan noted that once the system is set up, if someone goes to the website, it is probably less expensive to maintain data online and stop mailing paper reports. Fred noted that website participation levels have been really low. Phil added that they have been higher compared to other places but low in the grand scheme of things. The number of people that are interested enough in energy consumption to go to websites is small. This and other feedback has been given to Opower.

Fred noted that one of the objectives of this study was to see if this was a viable way to reach everybody since we have been trying to figure out how to get to most people. The benefit of this program is that it's so broad in scale - you don't have to be a homeowner. Alan responded that we want to be sure we don't engender ill will with people that don't want to receive this service.

Dave wondered what the "life" is for Opower savings. Phil responded that we have been considering terminating the service for a certain number of customers to see how long savings will last. In the PSE study, the benefit-cost ratio was increased by terminating service, yet savings kept on going for gas and electric customers. Currently, savings we are claiming is for 1-year savings as long folks are receiving PERs; if we drop customers and savings persist, we can claim those savings as well.

Peter noted we have been looking at alternatives. Utility partners have invested in other systems and aren't interested in expanding Opower. They would be interested in the persistence study. We have gotten information from this pilot on what customers to target and how to keep information fresh, but are lacking information on persistence.

Fred noted that he attended a presentation comparing billing-based monthly or less frequent reports, online tools, and real time tools. In terms of persuading people to make capital investments, billing-based reports seemed to be marginally more effective. This is an early indication this class of tools may be better than others.

Debbie noted much of the information in PERs is already in bills. Phil responded that this is one of few places customers see gas and electric together. Kate noted that the last report in the contract will be delivered in January. We want to look at persistence by dropping folks from the reports, making reports less frequent, and then keeping some folks on the same delivery schedule.

Alan asked if we have looked at cost of savings. Fred said in terms of cost-effectiveness it was marginal, although weatherization and other gas measures are as well. Phil noted that if we do the persistence study, savings should increase without cost increases.

5. 2012 Trade Ally Survey Presented by: Sarah Castor

Eighth annual Trade Ally survey was fielded internally but data was analyzed by Research into Action. Goals were to characterize Trade Allies (TA) and contractors, gather feedback on satisfaction with Energy Trust (ask about interaction with us, pitch new ideas) and assess market penetration of measures and technologies.

Web survey fielded March 23 – May 1, switched Qualtrics to distribute the survey, which allows for more sophisticated branching.

Open to all TA and other contractors working with Energy Trust. Real estate allies not eligible. E-mailed link to 1400 TAs.194 firms represented, with weights applied based on firm size. 85% worked with Energy Trust in 2011 and 15% were new to Energy Trust in 2012. 44% worked in Portland Metro. Since more than 44% of TAs are in Portland Metro, this indicates good representation from outlying areas. Respondents are mostly residential TAs, although we got a fair number of commercial and industrial and solar contractors.

Three-quarters said les than 50% of their revenue involved Energy Trust projects (comparable to previous years). 90% said Energy Trust has a positive economic impact on them. Half expected to increase their jobs involving Energy Trust and 33% expected no change. More than half of respondents rated incentives as a strong influence on projects.

80% of TAs do paperwork for three-quarters or more of customers (comparable to last year). For those that don't, most common reasons are that customer prefers to do it or don't have all info to complete forms. 90% are familiar with BETC and/or RETC.

Debbie asked if this is higher than it has been in the past. Sarah noted that when you combine familiarity with both BETC and RETC, it is about the same. 57% are familiar with BETC, and a third don't know specifics (most residential TAs don't interact with BETC much, so this isn't surprising). Many felt that changes to tax credits had a minor impact on business (although commercial and industrial TAs felt it had a larger impact). Fred commented this was surprising.

Debbie noted that contractors may not be as aware of decision-making that occurs at the corporate level with tax impacts versus incentive impacts, and this may account for the results. Dave also noted that most contractors have a short time frame, and they might not be looking very far ahead to what will affect their business. Sarah commented that we ask as part of Fast Feedback if changes in BETC affect plans, but we haven't been asking these questions for very long. We asked about financing: 21% actively promote Green Street or another offer and 45% are aware of financing offers but don't actively promote them. A quarter of respondents were not aware of these services. In terms of desired qualities in a financing product, contractors want simplified paperwork and online applications. Most desire qualities are simple paper and online apps

Dave asked about SW Washington activity. Peter provided some background on this: contract with NW Natural to serve their territory in Clark, Skamania, and one other country. NW Natural approached Energy Trust to extend work over to SW Washington. On residential side, there has been less activity than anticipated, but on commercial, much more. This is done as a bolt-on to our standard programs. There are some nuances: some measures in WA qualify while those in OR don't. Program size is approximately $2 million in delivery and incentives. Don't serve

industrial customers in WA, but Fluid will do existing homes and ICF will serve existing buildings. We partner with Clark PUD to provide marketing on joint electric and gas savings.

23% of respondents served SW Washington in 2011 (up from 19% in 2010 and 10% in 2009). Of those, 73% derive one quarter or less of work from WA. The main barriers to serving SW Washington according to TAs are lack of customer awareness, limited incentives, and "Energy Trust of Oregon."

82% respondents rated satisfaction with Energy Trust 4 or 5 out of 5, up 5 percentage points from last year. Other big gainer was response times to requests for information or assistance, 77% up from 57% (increase in 20 percentage points).

	SECTOR			
STATEMENT	RES. (N = 98)	C & I (N = 48)	RENEW-ABLES (N = 42)	ALL RESPONDENTS (N = 156)
Overall satisfaction with Energy Trust	82%	85%	83%	**82% (77% in 2011)**
Interactions with Energy Trust staff	81%	88%	86%	82%
Quality of responses to your requests	81%	83%	90%	81%
Quality of responses to your requests	78%	77%	83%	78%
Response times to requests for information or assistance	74%	81%	86%	**77% (57% in 2011)**
Turnaround time for incentive application/approval of paperwork	61%	79%	76%	65%
Incentive payment processing time	60%	65%	67%	60%

Dave noted that page 27 of the study suggested folks weren't satisfied with Energy Trust, so how does this correlate with the higher satisfaction numbers? Sarah will look into this.

Relationship with Energy Trust over the last year: half said it stayed the same, 44% said improved due to good relationships with staff members. 7% said it had gotten worse.

Cooperative marketing is desired as are trainings on programs/technical topics. Most popular areas for training are savings calculation tools and energy modeling. 74% said they attended training in 2011 or 2012 and 80% said it was somewhat or very valuable. Half said it was important that trainings qualify for continuing education credits (more so in residential). Tom B. noted that they are working on qualifying some trainings, though most are geared towards BPI training. Debbie noted that contractors need to do a certain number of hours for BPI and hours to retain contractor licenses.

Survey also asked about location and whether it prevented folks from participating in trainings (most said no). People did say they would be likely to attend webinar trainings if offered. 67% attended roundtables, and 75% attended last year. Most rated slightly to somewhat useful; not a lot of extreme ratings.

E-mails from program staff are the best way for TAs to get information. Need, 1-2 months' notice if program changes are occurring. 84% receive Insider, up 5% points last year. Most appear to read it casually. 97% find it somewhat or very useful. TAs were interested in the Insider including common problems and solutions and technical resources. Article length seems to be about right.

Two-thirds of TAs visit the website 1-3 times per month. 60% found TA webpages useful. 76% use a smartphone. 60% would use an app for program information or savings calculations.

Star rating system only applicable for residential TAs. 74% are familiar with rating system. 35% clear and 47% said somewhat clear. 63% say it is a fair system. Half find it useful and 1/3 are neutral. Most not receive customer feedback about system. Two-thirds know how to check their rating.

Alan asked about the suggestion in the report to look into quality versus quantity. Is it biased towards quantity? Sarah and Tom B. responded that quality is included, but so is quantity. Quantity is measured differently in rural areas of the state. Some contractors have not realized changes have been made and misunderstand the weights that have been added. Alan commented that these results suggest it needs to be explained better to contractors. Alan also asked if only 47% say the star rating system is useful or very useful, why are we using this system? Sarah and Steve responded that the system is a customer service tool, not a contractor, and is important for managing quality issues.

We asked about what methods are effective in generating leads for business. Not a lot of variation; we didn't learn much from the responses about lead generation tools. No strong interest or need in Energy Trust affiliation ID.

Looking at measure specific findings, the two most common services provided are HVAC or insulation air sealing. 90% installed heat pumps, 82% DHPs, 74% gas furnace, and 38% gas fireplaces. 70% HPs are HSPFC 9.0 or better, down just slightly from last year. Asked about cost of 9.0 relative to 8.5 (market baseline) - $500-1000. More than half of jobs get commissioning and 50% install a temperature cut-off switch, which represents a large part of commissioning savings. 64% furnaces are 95% or better. Fred commented that this is moderately higher, which makes sense, TAs should be doing more. Tom said the RBSA is consistent with those numbers.

DHPs, 53% have SEER of 20+ with an average size of 18K BTUs. Save more multi-head units than last year. Fred noted this is an area of concern as it doubles cost, driving up cost effectiveness. 66% displace zonal electric, 26% heat new space and the remainder displace/replace central electric systems.

For residential insulation and air sealing, half of jobs receive air sealing. For other residential measures, either too few responses to summarize or branching in survey didn't work properly.

Commercial HVAC, most work on existing buildings (80%) and install packaged units (83%) and gas furnaces (75%). For commercial and industrial lighting, most work in commercial (73%). The most common/interesting lighting installations were: 40% HP T8, 17% T5, 11% LED, 7% T12. Other commercial and industrial measures had no respondents or samples were too small to draw conclusions.

For solar electric and water heating, found that a small percentage of revenue comes from solar PV and thermal and from commercial jobs. Also, PV respondents have no backlog but an increase in customer inquiries. Debbie wondered if the Solarize programs are causing a concentration of activity. Sarah said that could be a reason for this, maybe installers have added more staff or there are more firms in the space. Fred said maybe these firms have diversified and are doing more than just solar installation. Peter said he was surprised by the small percentage of revenue from solar PV and commercial solar; he doesn't think firms have diversified.

Next year, we would like to drop measure specific questions and potentially ask them as part of an annual survey. It'd be good to get a representative sample. Phil commented that because these questions are short and standardized, we could focus on markets we are interested in, such as HVAC, commercial lighting, windows, and ask once a year or once every two years. This would help us track the market for efficient goods and services and see how they are progressing.

Debbie noted we might consider assessing the change in PMC next year as part of this survey. Phil noted we might want to delay the survey since the contractors will be coming on board in January. Peter expressed support for Debbie's proposal as well – doing a targeted survey partway through the year to get feedback. There will be two effects in residential: change in PMC and changes due to cost-effectiveness of measures. Debbie expressed the value of getting early feedback 6 months into the program. Phil and Dave mentioned doing a targeted survey. Phil thought it wouldn't be good to wrap this up with the TA survey because we might want to interview people and not do an e-mail survey. Also, would probably want to bring in high volume contractors to ask about the transition.

Wrap Up

Next Evaluation Committee Meeting will be September 2012, possibly adjacent to board meeting.

The agenda thus far includes: Residential Awareness, CEWO, New Buildings Process, New Buildings Impact, and 838 Process.