CONSERVATION ADVISORY COUNCIL
Notes from meeting on February 15, 2012

Attending from the Council:
Anne Snyder-Grassman, PGE
Don MacOdrum, Home Performance Guild
Juliet Johnson, OPUC
Don Jones, Pacific Power
Scott Inman, ORA
Holly Meyer, NW Natural
Bill Welch, EWEB
Stan Price, NEEC
Brent Barclay
Jim Abrahamson, Cascade Natural Gas

Attending from Energy Trust:
John Reynolds, board president
Peter West
Tom Beverly
Athena Enot
Marshall Johnson
Matt Braman
Fred Gordon
Diane Ferington
Oliver Kesting
Kim Crossman
Jessica Rose
Spencer Moersfelder

Others attending:
Jeremy Anderson, WISE
Andrew Reagen, Rogers Machinery
Dave Robison
Kendall Youngblood, PECI
Emily Moore, PECI
Tim Davis, CSG
Rob Hall
Scott Davidson, NEEA
Kyle Barton, CSG
Kari Greer, Pacific Power
Dave Hutchins, CSG
Marilyn Williamson, NW Natural
Terry Miller, CSG

1. Welcome and Introductions

Peter convened the meeting at 1:15 pm and reviewed the agenda. The agenda, notes and presentation materials are available on Energy Trust's website by clicking here.

2. 2011 Preliminary Results

Energy Trust had a good year in 2011, despite the economy and major changes to BETC. Preliminary results indicate that we exceeded both electric and gas stretch goals. We achieved the following percentages of stretch goal by utility: PGE, 97 percent; Pacific Power, 123 percent; NW Natural, 106 percent; and Cascade Natural Gas, 93 percent.

Peter noted that Energy Trust had projected it would double energy savings over the five years beginning in 2009, the first year of the current strategic plan. Including 2011 results, we have achieved 87 percent of that goal for gas and 67 percent for electricity—well on the way toward doubling savings.

Including the preliminary renewables results, Peter said we've prevented emitting about 240 million tons of CO^2, equal to planting more than 37,000 acres of trees. That's 7.75 million trees, the equivalent in land mass to about seven Forest Parks. Our 2011 results equal $51 million per year in reduced utility bills for Oregonians. Total spending for the year (Energy Trust plus project owners) is roughly $240 million—our biggest year yet. Preliminary savings for 2011 are 46.9 aMW of electricity and 5.4 million annual therms of natural gas.

Holly Meyer: Is that the whole amount of savings, or just the first year?

Peter: That's one year, not looking at the average weighted measure life. We used first year kWh and therms saved and multiplied them by the average costs on retail bills. Our weighted average measure life is about 8-12 years.

Don Jones: Ours comes in at 12.5 years.

Peter: It does depend on the program, but we can say that savings persist for about 12 years. The number I estimated was just one year's worth.

Don: Are these net? Do they have line losses in them?

Peter: They are net, but we have already translated them into the gross numbers you use.

Holly: The number you threw out is very visual. This is just energy saved times the retail rate to come up with savings?

Peter: This is just first year savings. So it's what they will save in 2012 because of what customers did in 2011.

Holly: This isn't a number for all ratepayers; just for participants?

Peter: Yes; it's just participants, not avoided generation costs. These numbers are all preliminary, and Fred's group needs to scrub them and look at the avoided generation benefits. They may change a little, but not much. We don't have the complete financials yet, and I can only say that we didn't go over budget.

BETC mitigation contributed quite a bit to our savings. We had 900 projects in the commercial and industrial programs. They cost us an extra $2.2 million, or three percent of our total incentive budget for all sources. We got nearly 43 million kWh from them, or 10 percent of all electric savings for 2011. So the mitigation strategy was quite successful and drove us past our stretch goal.

Kari Greer: Were these the BETC customers in the gap from ODOE?

Peter: Some were. From ODOE's list of 600 there were 311 projects that we could serve, gas and/or electric. We captured 128 of them but also brought in about 740 additional projects. The total number of projects is higher than 900, but some are dual fuel. The bonus incentives brought us 368,000 therms of gas savings, representing seven percent of total gas savings; so mitigation really mattered.

Juliet Johnson: How can you know that all of those were because of mitigation? Were some of these new projects?

Peter: You can't know for certain. There were additional projects that came in and got the bonus. Some of them could have proceeded on their own, but our analysis concluded that, based on loss of BETC and other financial hurdles, we would lose these projects if we didn't do something. Only later evaluations will tell us how many projects were driven by the bonus.

Bill Welch: It feels like an experiment in a way. It was a look at how many more projects and savings can you get and what will it cost.

Peter: This year will be the full experiment, testing the effectiveness of the bonus in attracting new projects. The rules are just coming out now. They include a small ($2 million) prescriptive pilot. ODOE did a good job identifying projects with paybacks too long for most owners without additional help.

Holly: Do these numbers represent only the bonus amount or do they include the total payment?

Peter: We're showing just the bonus adder.

Holly: It seems a flawed conclusion to say the bonus alone brought in these savings, since we paid more than the bonus to acquire the savings.

Peter: The bonus was roughly 20 percent more than the standard incentive. What I heard from the CAC is that you wanted to see how much more the bonus cost, and how it compared with what we paid overall. I'm happy to provide something that you find more helpful.

Holly: It would be good to know what we paid overall.

Peter: The math is straightforward to get a quick sense of total payments. The bonus amount was 20 percent of the total incentive.

Peter: The majority of projects were commercial, but half of electric savings and two-thirds of gas savings were from the industrial sector. Overall, on the commercial side, the bonus brought in 16.5 percent of electric savings and 11 percent of gas savings. These 701 projects provided savings of almost 22 million kWh and 240,000 therms.

Our analysis shows the bonus incentives drove savings. Subsequent evaluations will tell us more about customers' motivations and free riders.

Juliet: For me, they are great results and I'm not as concerned about bonus versus standard incentives. It's not critical to me to know that number.

Kim Crossman: From an evaluation perspective, it's really difficult to actually tease out the differences. The free rider question is: did we influence things or not? It would be difficult for us to get data about what portion of the incentives had the greatest influence.

Juliet: However, this shows it worked.

Commercial sector
Oliver Kesting addressed commercial programs, referring to overview on the third page of the handout. He noted the handout appears to be missing the section on multifamily and said he would provide that later. He noted Existing Buildings is referenced twice. He reiterated Peter's conclusion that the fall bonus had the desired effects for the commercial program in which it was offered, Existing Buildings/Multifamily. Results were strong despite the down economy and tax credit uncertainties. The programs exceeded conservative goals for all utilities and exceeded stretch goals for NW Natural, Cascade Natural Gas and Pacific Power.

He noted that for Existing Buildings, 25 percent of electric savings and 17 percent of gas savings benefited from the fall bonus. Q4 was one of the most eventful quarters in the commercial programs' history. There had been fewer large projects in the pipeline at the beginning of the year. To mitigate this, programs focused on identifying and closing stalled

projects from previous years, using the fall bonus to get them moving. Electric savings came primarily from controls, lighting, custom HVAC and chillers, all of which are custom capital measures and qualified for the bonus. Rooftop A/C units brought gas savings representing 25-30 percent of goals.

At the end of the year there was a big push from program staff, who worked long hours to inspect and close projects.

Multifamily exceeded the conservative goal for PGE and NW Natural and beat stretch for Pacific Power. Electric savings were 30 percent higher than in previous years, despite having a new program management contractor. Multifamily success came from strong outreach efforts and relationship-building with property management companies and housing agencies. Instant savings measures and direct installs comprised 74 percent of the savings. Prescriptive incentives and common area lighting made up 26 percent.

One large, ductless heat pump multifamily project came in Q4, the largest such project to date in Pacific Power territory. We worked with affordable housing agencies to conduct custom studies and develop long term strategies to bring in savings. The first projects from this effort will likely close in Q1 of this year.

New Buildings enrolled many more projects than in previous years, a record 415 enrollments. New Buildings projects take longer; 192 of these projects are expected to close in 2012. We closed 288 projects in 2011 compared to 238 in 2010. Several are large projects that had been in development for several years. New Buildings also expanded its work with program allies to include more design professionals. The program offered six trainings for these allies.

Peter: 32 percent of all our electric savings and 39 percent of our gas savings came from the commercial programs. 11 percent came from NEEA.

Charlie Grist: What is the Existing Buildings fraction for lighting savings? For Pacific Power it's 21 percent, right?

Oliver: The bullets on the sheet don't line up. 61 percent represents lighting savings for PGE; 21 percent of savings in Pacific Power territory received the fall bonus in Pacific Power.

Charlie: Do overall lighting savings line up for Pacific Power and PGE?

Oliver and Murali: They are roughly the same.

Peter: This industrial sector produced 29 percent of electric savings and 19 percent of gas savings.

Industrial sector
Kim: We haven't had time to complete stats on trends in the industrial program, so we will bring those back to a future CAC meeting. The dashboard does not reflect the different components of the industrial program. We achieved 99 percent of stretch electric goals and 119 percent of stretch gas goals for the year. We exceeded the stretch goal in Pacific Power territory by a big amount. A handful of large Pacific Power customers began participating in strategic energy management (SEM) in 2011. We got cheap O&M savings to bring down the cost curve, with big savings results.

PGE was a challenge from the beginning of 2011. We felt we didn't have a big enough pipeline. The fall bonus was the most significant factor in the end, but we also launched a few technical service offerings targeted at PGE customers that proved successful in producing savings.

We continue to ramp up in our third year of serving gas customers. Customers are still just learning about us. So we're in low-hanging-fruit mode, and expect to see similar activity levels for the next couple of years. We fell short of the conservative goal in Cascade Natural Gas territory, but even so had higher volume and bigger savings than expected. We can tie this directly to the bonus. Half of the savings, one big project, had canceled due to tax credit cuts. The bonus changed their minds, and they went forward. The bonus had a big effect on our savings.

Brent Barclay: What measure life are you using for these?

Kim: For O&M and Strategic Energy Management we use a three-year measure life, and for capital measures we use 15 years.

Brent: So, for O&M and SEM the boost may not be as long lived, but savings are good.

Kim: First year savings are great, but the measures are not as long lived. Custom capital and SEM were similar, but custom capital has a long measure life. The costs of first year savings are fabulous for SEM.

Charlie: So how did SEM contribute?

Kim: These are quick data points. IEI has been one of the biggest. This year's cohort had some really big sites and achieved tremendous savings, around 18 million kWh. SEM refrigeration management savings were great. SEM savings all together were just under 20 percent of the program total for 2012, with another 10-15 percent of savings coming from custom O&M measures. So, that's one third of the industrial electric savings. Most of our growth has come from SEM because capital investment is down due to the economy. This is the first year we had gas customers in SEM. Many of the largest customers are on transport rates and aren't eligible for gas savings, but we got some in the IEI that were. We had 270,000 therms from these two gas-eligible sites. We know that SEM tools and strategies have been used by our customers to manage gas, diesel, or other fuels in addition to electricity, but we have only counted electric. As we begin to scale down the size of sites we're providing SEM to, there's a bigger opportunity for gas savings at these eligible sites and we could see a big jump in gas results next year.

Peter: You ramped up lighting quite a bit also.

Kim: The number of lighting projects and small industrial projects has changed our overall project volume numbers quite dramatically. They are on their fourth year and ramping quite a bit, still. Looking at our activity stats, we had a lower number of custom studies in 2011 than in 2010, but the number of completed projects overall climbed dramatically because of the volume in lighting.

Charlie: So the number of studies going forward has improved?

Kim: We have to do studies when something is actually there to study. However, with our delivery model, we have been doing more direct-to-offer through our PDCs.

Charlie: Just do it rather than study it.

Kim: Yes.

Peter: 28 percent of electric savings and 38 percent of gas savings came from residential. Diane will go over the details.

Residential sector
Diane: Like Kim we don't have all our numbers in, but the volume of activity is exciting. Existing Homes delivered 7,000 Home Energy Reviews. Savings Within Reach has grown by 200 percent. Many of the Savings Within Reach projects were in collaboration with Energize Clackamas, which contributed up to an additional $1,000 per project. Additionally, 5,000 mobile homes got duct sealing, and Clean Energy Works Oregon (CEWO) accounted for about 1,100 projects last year. We reached 100 percent of stretch goals for PGE and NW Natural, and exceeded Pacific Power by quite a bit, in large part due to strong retail bulb sales and a mobile home duct sealing contractor who really grew and ramped up in Southern Oregon. Refrigerator recycling contributed to Pacific Power savings. In Cascade Natural Gas territory, we had an increase in Home Performance activity. With CEWO launching out there soon, we'll see more Cascade Natural Gas therms in the coming year.

In New Homes we had 812 homes that received an Energy Performance Score (EPS). We had a 17 percent market share target, and the program achieved a 23 percent market share. The product volumes were amazing. There were about 24,000 old refrigerators taken off the grid. New refrigerators freezers and dishwashers amounted to 23,756 units. There were 23,659 new clothes washers that received incentives. The Opower pilot served 60,000 customers with reports for savings of 9.7 million kWh for PGE and 420,000 therms for NW Natural.

Jim Abrahamson: How many duct sealing projects were there?

Diane: 4,940.

Marshall: Also 43 mobile homes in Cascade Natural Gas territory were completed.

Holly: CEWO is 1,100, but what is the 672?

Diane: The 600 figure references NW Natural specific. This number was sites. The Clean Energy Works numbers include any project imported into our system in 2011, and included the end of Clean Energy Works Portland, too.

Peter: Since we have renewable stats here, I'll briefly run through them. We had a three average megawatt goal for renewables. For such a tough year, including the loss of BETC, we got about halfway to the goal. It was actually the biggest year we've had in PV and Small Wind. Standard PV represents 8 million watts of capacity. It took us seven years to get there and now volume has grown exponentially from before. 2011 brings the whole program up to about 20 million watts of installed PV. The incentive was originally at $4.25 per watt, and now is down to between $1.50 and $1.75 for residential systems, so the market is being transformed. Looking at what is next, the renewables pipeline matters. The average length of time from when we have a project application to starting construction is 18 months. We are well over goal for the pipeline from projects approved in 2011, and we have a pipeline for 2012 and 2013 that's double our goal. Nearly all have BETC or RETC tax credits available from the grandfathered system, so the odds of seeing them come through are high.

3. 2012 Program Initiatives and Pilots

Commercial sector
Oliver Kesting: We have several commercial innovations planned for 2012. One of the big efforts is around building a business case for energy efficiency across all the programs. How do you enhance the business case to sell comprehensive energy investments to decision makers? This effort started in mid 2011, when we enlisted an expert to train our outreach folks, look at our tools and audit materials, update them, and make them more relevant.

Existing Buildings has several efforts going on. The building performance tracking and controls initiative tracks savings and measure persistence by helping building operators improve efficiency. The rooftop unit (RTU) initiative is an ongoing effort to implement a suite of O&M measures to tune up and improve rooftop units. It includes demand control ventilation, repair of economizers and thermostats. The lighting design pilot encourages trade allies to specify projects that increase kWh beyond the baseline. Federal standards will challenge our model, and this initiative will get folks to do more, focus on power density and implement better controls. We are working with NEEA on this effort.

Assisted living lighting design is a focused effort that will start in Q2 this year with a pilot in assisted living facilities. A specialist identified a need to help these outdated facilities, and we'll be using a contractor focused on lighting design templates. We'll survey occupants and staff to gauge success.

SEM is really two efforts launched last year. Commercial Energy Improvement (a cohort approach) aims to approach customers and help them integrate energy management into their core business. We have eight enrolled so far. The integrated energy management (IEM) approach is individually based and focused on energy management in facilities. Both of these efforts utilize a combination of training workshops, one-on-one coaching, opportunity assessments, organizational assessments, energy information systems, strategic planning and support in implementing the strategic action plans. It also looks at savings analysis monitoring and reporting and will provide incentives

Charlie: How many are in it?

Oliver: CEI has 8, and IEM is at one now, but we're looking at two more. The cohort approach is geared toward larger facilities and office buildings. The one-on-one approach will also work for retail chain stores and restaurants.

Juliet: Are you looking at other states that have been successful in this sector?

Oliver: We've seen great success on the industrial side and with NEEA. Commercial has several variables, and we have to adjust for weather and occupant use. The pilot helps us nail those down. I don't think we've looked at other states.

Our resource conservation manager (RCM) pilot—not yet fully formed—will look at schools and multifamily and provide incentives to hire an RCM to focus on O&M and savings opportunities. Puget Sound has something like this. We're also looking at low income multifamily. We are looking for mid range, not full blown SEM, but can look at multiple facilities across multifamily or school districts.

Peter: NEEA, BPA and Energy Trust have been leaders nationwide in SEM. Other program managers come to our presentations at conferences for information, but it is a bit of a one-way

exchange, as we are ahead of the curve. There are no other models out there as forward as ours on SEM.

Charlie: On SEM, have you discovered good tools for the metrics to measure the savings?

Oliver: We're in the early stages, but everyone in the pilot will have some system.

Juliet: The RCM pilot or SEM?

Oliver: SEM isn't a pilot anymore. We're trying to figure out how to adjust the industrial model to work for us.

Charlie: The Regional Technical Forum (RTF) will probably take up the discussion of protocols for measuring these things, so keeping Nick O'Neill up to speed will help vet that and expose it to the rest of the region. You're blazing a trail for us.

Oliver: MPower is a proposed on-bill financing fund for low income multifamily housing in Portland. The Network for Oregon Affordable Housing (NOAH) received a grant from HUD supporting this. We are committed to offering incentives and are working on details.

Bill: Where is the loan coming from? Is it on-bill?

Oliver: It came from HUD, so it's federal, and there are other sources for on bill financing. We are really in the early stages of looking at this.

Brent: Is this for tenants or master-metered places?

Oliver: We are starting with master metered

Juliet: Also, who are you working with?

Oliver: We're working with NOAH, PGE, Blue Tree Strategies, the city and others.

Andrea Jacob: This will include a voluntary surcharge on the landlord's bill, but the remainder comes from many other sources, including Energy Trust.

Oliver: The tenant thermostat pilot is something we're developing. It will be a tenant behavior pilot to measure energy usage between a control building and another where tenants are educated on savings.

The upstream savings pilot was started early this February, when we did the first upstream appliance incentives at the distributor level. This pilot resulted from a competitive RFP for high-efficiency clothes washers. It offers a manufacturer's discount and incentive on our end. The price of a high-efficiency clothes washer will be to be comparable to or less than the cost of low end models. The effort would remove paperwork from property managers and move them to high-efficiency models.

Brent: Is this for units in shared facilities?

Scott Swearingen: The RFP was for in-unit and common areas, but the only ones being offered at this time are the in-unit models.

Oliver: We have an RFP for a similar promotion around refrigerators that will go out in Q2.

A New Buildings pilot will get started to serve the smaller market and get customers to do more through small bundles of measures. They will save more and do more in addition to HVAC with the measure bundles.

Data center activity is increasing, and we are looking at large customers and prescriptive measures for small to mid-sized data centers.

Juliet: On upstream incentives, why are you doing it instead of NEEA?

Oliver: With our new contract we've formed better relationships with facility managers.

Scott: Typical replacement of appliances is on failure, and the paperwork burden was too much to overcome for property owners. The baseline is different than single-family; whatever is the cheapest is what they buy. So how do we get high-efficiency to be cheapest? They don't even have to know that's what they're buying or make the effort to apply for incentives.

Juliet: Who gets the money upstream?

Scott: The payments go to the distributors.

Charlie: It just places the incentive in a different place or level.

Charlie: How far along are you with designing an approach to data centers?

Jessica Rose: We're in the early stages of development. We did a market assessment late last year. We haven't carved out an offer, but we're looking at a springtime launch. All of it is being done in house. We had quite a few data centers come through in the past, and hear there are more coming. Smaller stuff may be on the way. We're looking to address the market as a whole and do prescriptive measures. There aren't a lot of standards in the industry. We need to get in early in the design phase to work with HVAC and get them to accept higher temperature and humidity thresholds, for example.

Charlie: About a year ago I told RTF funders about this and there was no interest at all. Now, BPA and a few others around the region are interested. They want to figure out what market there is to crack and crack it. Transformation plays a role we may want to coordinate on. It needs to be organized, but I sense a palpable interest.

Peter: For the small commercial pilot, we tried something in 2011, but the offering was too much of a hurdle for most of the market, and we stepped back and toned it down a bit. We learned a lot the first year. However, it did help to develop the new reach code. It's a different standard and broader reach to a wider audience. The goal with small commercial is to go back in and emulate that sort of market penetration.

Jessica: A dozen projects have signed up so far and six have completed. It was a targeted offering, specific to building type, such as retail and restaurant. We're looking at a tiered offering to be flexible and customizable.

Residential sector
Diane: We have a lot going on in residential that boils down to simplifying and making things easier for the customer. Every customer who has a Home Energy Review either on phone or by

site visit gets a custom home energy report, based on the Energy Savvy tool if by phone or CSG's Energy Measure Home if it's an auditor in the home. There will be direct contractor referrals, and we've presented that process and methodology to the CAC previously. We have a procedure for picking contractors with the right skill set, QC record and proximity to customers. It will be launching on March 1. We are launching a build-your-own kit for low cost devices. A customer can answer a series of questions online and be presented with the right devices for them. We'll include cold water laundry detergent coupons in the kits. We're planning on fewer than 30,000 kits, while last year we delivered 50,000. We want to get the right quality of kits rather than high volume. Customer engagement is about quality and helping with best options rather than giving all the available options.

We'll look at empowering contractors, and instead of the program delivering ISMs, contractors can go to a warehouse and select CFLs or whatever other ISMs, and we'll reimburse them with the addition of a small installation charge. That way, they can add value for their customers and we get the savings. We'll also help contractors market with a code that's unique to them, so we can track their customer referrals. Customers can remain tied to a contractor and we can give feedback on leads from marketing. Contractors will also be able to go online to complete customer forms. The program has created marketing templates online and they can use then them to order customized materials directly with the print house and apply cooperative marketing, a self-service approach that we hope contractors find easy to use. Rogue Valley Council of Governments (RVCOG) and NEEA are helping with an initiative in Q2 involving bulk buy of ductless mini split heat pumps, an approach we have been eager to try. We're already doing ductless heat pumps with their help.

NEEA is leading on the heat pump water heater pilot. We targeted a cap of about 200 units for this year. There's an upstream incentive for distributors and installers that is being refined now. There's a consumer incentive as well. Most players will be adding something. We'll start at tier two northern climate specifications.

We will have an instant incentive with Sears. Stores at three malls in our area will be doing instant refrigerator incentives for the next six months. We would love to expand this to more retailers and products. We'll continue to do prescriptive duct sealing with a rural focus. We are also handing out cold water laundry detergent bottles at Home Energy Reviews and coupons for Proctor & Gamble's cold water laundry product. We are looking at both customer survey feedback and billing analysis against a control group to measure success.

The 60,000 customer pilot for OPower will continue. Only 0.7 percent of those have opted out. The electric savings are better than our conservative estimates. We'll know gas savings soon when the heating season ends. We will have a pilot for Home Energy Reviews with more intentional follow up strategies. MIT and the MacArthur Foundation are helping with funding to follow up with people at 90 days, and we can offer additional incentives to see whether it causes a better response. Different regimens will be tested to see what type of follow up works best.

Brent: With the Sears pilot, will people have to show who their utility is?

Matt: It's a pilot, and they will have to give name and address. Pilot evaluations will identify how many are correct and how many are made up.

Scott Inman: Is this Home Energy Report handout an actual report the customer would see?

Diane: That's the actual final look and feel but it's not populated with an actual customer's data, and the online questions they get will inform what they receive on the report.

Scott: It listed half a dozen things, including windows and sealing air leaks, but windows didn't show as one of the things they could do. Why not?

Diane: It has to do with the best options for the money.

Kyle Barton: It focuses on the best opportunities first. It has fixed recommendations that would go on the report, but then the auditor can add or remove recommendations. If the existing windows are single pane windows, we will recommend new ones. This handout is a sample, and it doesn't have all the recommendations on it. We will offer a "keep it going" statement.

Marshall: Some of it is based on an advisor's input from audits. One of the recommendations would be windows if the existing condition is less than double pane. If they are double pane, windows might not be a recommendation. Windows might come up under dynamic treatment or additional recommendations, or if they call us specifically about windows.

Holly: The report shows costs to run the house are the same as your savings if you do everything recommended. According to the report, you won't have an energy bill if you do all the recommendations.

Diane: This is just a sample and the data should not be read literally. It shows what the report will look like.

Scott Inman: My concern is that we're taking the societal cost of measures into account when you do the form, rather than just listing opportunities. Windows may be 10 times the cost of some other measure, but they still save energy. Is that what goes into the recommendations?

Kyle: We look at measure life and such behind the scenes. The measure cost is built into the calculations.

Peter: if a customer was interested in windows it would show up on this report. If they are after things that are lowest cost, windows wouldn't be there.

Scott: Most people will pick one project to do per year, so if you only give them four recommendations, they figure they're done after those four. If you don't show other things, they may not do them. For example, with instant hot water you should let the homeowner decide their priorities. Insulation makes sense, but I'm concerned the homeowner won't come back and ask about more options.

Marshall: Maybe the residential trade ally advisory group can review the methodology behind how this document gets developed and ORA can participate and talk through it in that setting.

Peter: Scott should be there for their next meeting.

Holly: It looks great to me. The document is very helpful and I want one for my own home.

Diane: We also have an air sealing pilot for New Homes, and Matt can address that.

Matt: We're trying to engage with homes that aren't coming through the program, by seeking to work directly with subcontractors who do insulation to air seal the top plate of the homes. Connecting with just a few of them can give us one third to one half of the market. We have over

500 builders, and it would be tough to engage with all of them and train them. This is a way to work around that number.

Scott: Don't the new energy codes cover that?

Matt: They touch on it, but what key components can we work on now for the 2020 codes? This helps get us there.

Peter: Thank you Holly for the compliment on the report. Consumers thought the same way, and the HER report was what they liked the best.

Holly: You could almost make this report the EPS report.

Peter: Customers certainly support it.

Bill: On the air sealing pilot, how are you addressing ventilation?

Matt: We're using the thermal bypass checklist as one of the components. Code already requires some ventilation, and we are learning it right now.

Industrial sector
Kim Crossman: Our program lifecycle for 2009 and 2010 included big innovations under the umbrella of O&M and SEM. We attempted to integrate all of the pilots into the program in 2010 and 2011. This year we are continuing to integrate, tune and refine these. For new activity, both of our 2012 innovations are variations on a theme. The small' industrial SEM pilot scales the SEM offering back to serve small and medium-sized industrial customers. There are a couple of barriers due to how the facilities are staffed. It's behavioral, and in these facilities a small group of people wear many hats, so how do you get them to do all the work of larger groups and companies? We see 5 to 10 percent savings in large places, but what can you expect in smaller ones?

The other innovation this year involves helping our customers reach ISO 5001 certification. We are targeting two to four customers who have already been through SEM.

Regarding small industrial SEM: we're running it like a cohort, a lot like IEI. There will be some modifications to the curriculum due to staffing shortages. We would consider some to be large industries, but they're not as large as we normally target. Medium-scale industrial customers, like food processors, are the target and they are ready.

SEM in our world is an umbrella term that encompasses behaviors, policies and mindsets. We use it in the broadest sense. Small industrial SEM is comprehensive, and hits on the whole for these companies. We'll have fewer live training sessions and the cohort will be 20 companies. We'll do more webinars and use online resources. The soft part of SEM is not where we're starting with these customers. We are going in with energy saving opportunities first, then stepping back to policy things. We expect 2-10 percent savings. These are direct savings from low and no cost actions—behavioral changes and O&M. We expect that SEM will help these sites implement capital efforts in the future.

Customers of this size are more likely to be eligible for gas incentives, so this is the best opportunity to get more gas savings from SEM.

Bill: It's ironic that SEM results in low cost/no cost and O&M, tactical stuff if you run it intelligently. Strategic management should look at all aspects of how you run things: inputs, processes and all.

Kim: We get them hooked through low and no cost, then work on the other things to tie it all back together.

How strategic can a small plant be? No one knows the answer. NEEA is running a concurrent pilot with maybe two other utilities. It's a different solution set they are testing, more like online educational resources with no touch. It's an exciting opportunity to compare with something like IEI. With that solution set and an entirely new one, we can compare costs. At least we can coordinate and prepare to track common metrics so we can compare these pilots apples to apples across the region, see what works and learn together faster.

Peter: The hook may be low tech things but the process is to have them understand how to use data and drive it into decision making so it impacts their strategy.

Kim: When we ran the IEI pilot, it was more like resource acquisition, it felt like a sure thing in terms of savings. We really don't know if this pilot will do the same.

The ISO 50001 standard supports continuous improvement and formalization of the SEM program. It formalizes documentation and integration. They need to have a goal and define their energy performance. We want to do this because ISO is additive. Persistence of savings is one reason we want to do it. In this case it institutionalizes practices rather than focusing on individual champions. We want to understand the difference between what we're doing and the standard.

The US isn't the biggest country for ISO standards. Europe and Asia have more companies committed. It's big in companies that export things overseas.

Bill: Big world players understand what it's all about. Smaller businesses don't see the benefit.

Kim: That was my first reaction. We've basically targeted a few companies and said we would work with a couple of them. They needed to be an ISO standard company. Four companies jumped at it; all are international companies already certified to ISO standards. We may not convert people that didn't already care. One of our example companies has top management that doesn't pay much attention to SEM but does pay attention to certifications. ISO standards would help their energy champion get buy in. This can also put a lot of Oregon companies on the map as the first few in the nation to achieve ISO 50001 certification.

Brent: Is there a recertification that causes them to persist?

Kim: They have to recertify every three years to maintain it.

Bill: Does this also define processes—how you do it and document it?

Kim: It looks like ISO 9001 if the energy standards were expanded.

Charlie: As a CAC member, I would be remiss if I didn't mention to all of you that 2011 was a stunning performance. I know the numbers are preliminary but we need to congratulate everyone here for their work. You all deserve congratulations.

Peter: Thank you. It was an organization-wide effort, and we also clicked well with the contractors. The folks out in the field mattered a lot because we had great partners out there, and they are the ones doing the installation work.

4. Existing Homes Energy Performance Score

Peter West introduced the EPS discussion.

Peter: Jeremy from WISE was the first to submit EPS comments, so thank you, Jeremy. Comments have been slow coming in, and we need them by Friday. Then we'll be looking at them in earnest. You get a benefit for being in early, because we have more time to review these comments. What we're trying to get out of today's discussion is to bring folks up to speed if they couldn't be at the EPS meeting, so we can get your early comments and gauge next steps.

Jim Abrahamson: Will this go up on the website?

Peter: This information will all be on the website. Matt will cover the EPS details.

Matt: at the January 23 meeting, participants expressed a lot of interest in EPS issues. The material will be posted on the website. I've got about 15 minutes of presentation, and we'll take comments for about 45 minutes. We're looking at goals, background, comments and next steps.

EPS is a tool for strategic engagement of customers and markets. It gives owners information about their homes to help them make improvements, and makes consumers aware of the energy efficient features of their homes.

Newer and smaller homes will score better. The metrics include the overall energy score, operating costs, and carbon impacts.

Our slides show newest look and feel to the EPS report. The score is in the middle and carbon is on the bottom. There are benchmarks, but not all are up on this example. They are comparisons for your home.

The goal was to find out if EPS would motivate people to act sooner, go deeper, or do both. How do people relate to carbon information? Some Home Energy Review (HER) customers got a DOE score, others got an EPS, and some received only our normal handouts. We tracked follow through rates and checked on visual preferences through focus groups.

Does EPS direct people to do the right things? We used SEEM as the regional benchmark and we compared each tool to that benchmark to consider which one was best for the program.

Key findings were consolidated from all of 2011's work. The score does not yet appear to be driving actions or investments, but it's too early to tell. We need a full year of data to draw conclusions. There is some uncertainty about it as a driver. Despite confusion, focus groups had a favorable opinion of EPS. We found a problem in that individual measures have only a small impact on the score. Doing several at once has a bigger impact. We found that our goal of finding a scoring method is achievable. Consistency among tools is still an issue.

Two tools we tried would work well but neither is perfect. We also found that multiple tools in the same market will not give the same homes the same score.

Holly: Was one of the tools the one that produced the last sample sheet that went around?

Matt: That was CSG's Energy Measure Home, which used in our Existing Homes program.

There were some issues. For instance, determining an absolute "MPG" for a home is a problem. You can look at the same home with a heat pump or a gas furnace. The costs of operating the furnace are lower, but the EPS score is higher. You can minimize your annual costs, but your score may not follow.

Holly: I agree, but that's if you're leaving the decision to the homeowner. We should also fold in the least cost for the region.

Matt: I understand.

Don Jones: We know the scale on the left is million BTUs, but is it annual consumption?

Matt: You can convert annual kWh and therms to BTUs, but costs don't convert.

Another example shows the EPS, carbon impact and operating costs. When a home upgrades from a 25-year-old furnace to new furnace, the EPS goes down some, the cost goes down, and CO^2 goes down. With a heat pump, EPS goes way down, but costs go up, and C02 goes up.

Don M: You shouldn't call it a rating, score or index, because it will be confusing to customers.

Peter: Whatever you call it—a rating, score or index—if it's based purely on site millions of BTUs, you'll get this kind of confusion.

Jim: If you don't call it one of these things, what good is it?

Peter: If it's a score that's fair across fuel and housing types, you have something. You can make improvements.

Jim: Improve in terms of what, though? CO^2? Operating costs?

Matt: If we're all moving in the same direction, then we're comfortable with the impact.

Don: How many other heat source comparison examples are there that cause this kind of confusion? Is the cost of electricity versus cost of gas the main difference?

Matt: Part of it is the site versus source issue. Heat pumps are efficient but a fair amount of the electricity powering them is lost in transmission and distribution.

Peter: It's also the relative cost of kWhs versus therms, and the source of electric generation. If you're switching from gas to electric, you may be switching to something more carbon intensive because of coal plants in the resource supply for electricity. It's confusing. With the two models that perform the best, you're telling people that lower EPS scores through fuel switching are good, but if they increase your carbon footprint, they're bad—so you're asking people to trade off a good with a bad. Less energy should mean less pollution; keeping that message simple and reinforced is what we want. If you create confusion, you can't make a sale or get people to act. This is our fundamental issue. The first set of studies said simpler models were better, and that's good. We can make the simple models work, but this one type of model based on site million BTUs has an anomaly. There are fixes for it, like indexing.

Matt: Fuel neutrality is important for us. Site energy favors heat pumps. Several methods can overcome the bias, and there's work to be done. Source energy favors gas and, but the cost changes annually. They aren't great solutions.

Don J: In the beginning you said it involved three metrics. Is it just the one, or does EPS involve all three? Do the operating costs and carbon footprint account for source energy?

Andria Jacob: In the heat pump, if you have lower BTUs and the CO^2 score is site based, how do you get a 9?

Matt: CO^2 is source.

Bill: I can understand why a consumer would want a site-based score. If you had to explain all the losses and such, I can get why it would be a problem. What kinds of things were people confused about with the CO^2?

Peter: Source on the CO^2 in Oregon is different than how the EPA does it. It involves each utility's generation mix for their customers, with inter- and intra-regional trades taken into account. It's more about how many kWh did you put into the grid to serve your customers, and what did you buy, trade, or get on the open market? All that gets sifted together by ODOE and others, and you get the average carbon for each utility's supply mix.

Don J: It's allocated generation based on a set formula, and reset year after year.

Peter: ODOE does it, but I'm not sure if they look at the efficiency of your plant or an average.

Don J: I think it's the specific plant.

Peter: On the CO^2 side of the example, you are displacing gas or electricity with a higher content when using source-based.

Bill: We all understand site versus source and want this report to reflect reality. But that's us. Did this anomaly come up later, and did the sample group get confused over it? Was it the CO^2or the non-intuitive nature of the example?

Peter: This came out second. Our first questions were what kind of model can work? Simpler ones were better, but they still had problems. It was still compared against a bill. This can't be used to forecast your behavior. This is the average expected use, but you may drive it harder.

Fred Gordon: In a focus group they mistook carbon for carbon monoxide.

Bill: Is CO^2 really confusing people?

Fred: They needed to be trained to understand the score.

Diane and Matt: We called it carbon footprint and put it down lower on the report. Mitigation at the time of sale and carbon strategies will be important to the governor's initiatives.

Juliet: Is the confusion around gas and electric, or just carbon?

Fred: It's just the carbon part.

Holly: While you can compare the score of different houses, it just shows whether one is used more than another. It doesn't show how efficient the houses are. As is, it doesn't compare the relative energy efficiency of the houses. Source doesn't fix the problem either. To get to the benchmark you have to click in deeper, like with RMLS.

Diane: RMLS does want to include the annual operating cost of the home.

Peter: In new homes EPS there are tick marks in the middle of the report. It says, "Here is your score, and the average for your type of house." If you intended to buy a 2,400 square foot house, you would see a house of that type as your benchmark. What does that score mean? A big house will have a bigger footprint; period. What we understand from the real estate folks is that someone wanting to buy a small house will buy a small house. We want to understand if the number on the report is good or not when comparing small houses.

Fred: The MPG analogy helps us here. After it came out, eight years later, people figured it out. They could compare the score between a small car versus a small car. The same thing will happen with houses.

Holly: People will say that this big house is an energy hog, but people really want to know if it's doing well for a big house. How much do you still need to do to be as efficient as possible? Given all I can do in the house, how far am I along the path?

Peter: There's still a fundamental issue we have to solve before we get to representation.

Matt: One of the possible solutions is a scale or index that can mathematically do things behind the scenes to make the same home with the same efficiency measures and different fuels match up.

Don M: Our testimony will say that an index will not have value. If it's not absolute, you are moving away from consumption; try to bundle it together. If the worry is too many numbers with too much data manipulation, and the homeowner asks the realtor to find something within the metrics they want, you have issues in the index itself.

Matt: Hosting a score is an expensive effort. Multiple plausible models exist and models need to be updated, so multiple tools involve more resources. An index score is one way of doing it, and not hard for us to do. But that's an issue in the market. Maybe we use something not linked to energy use, like Fred's 1-10 index. DOE's Home Energy Score is another option. Do we create our own or use another one that's already created?

We heard that the market is ready and wants a score to use. There is still disagreement from stakeholders regarding the best way to show the score. Those were the two big takeaways from the discussion.

Next steps will be to absorb this information and develop a straw proposal. We'll take that to the April CAC meeting.

Don: The broader issue of indexing is not addressed, and I would have to go back and read further.

Andria: Energy Trust could just decide not to decide. What's the probability of doing that?

Peter: That's possible. We own the rights to the name "Energy Performance Score" in Oregon. If you called it something different, someone could roll it out right now. We might not support it, but you could do it.

Andria: I think we are all waiting for something. Will Energy Trust help the market decide which way to go? If you aren't going to do that, we need to know that too.

Peter: We will be working toward a straw proposal before April 18. We've spent four years on EPS without a kWh of savings to show for it. We want it to happen, but we think the current models will create confusion and get us less savings. It will pit fuel types against each other, and create conditions for less-than-scrupulous types to get more expensive homes to look efficient. That will drive a backlash to us and to utilities. We are all trusted resources for the customers, and it puts us in a bad spot.

If the majority of the stakeholders can't come to agreement, we have no place left to go. Proceeding with no agreement will cause us to waste our time. The HER leave-behind is good and well supported, and we'll go back to that.

Jeremy: A couple of points here: one, you have to judge this against just handing out cash. Whatever you do should be judged against going and buying $200 worth of insulation. We've talked a lot about the tool, but not what we want to do with it. One thing is selling a house, and the other is getting someone into the house to repair the ducts, for example.

Fred: We can't separate one from the other—whatever tool we promote will be available to both worlds

Peter: This will be a market transformation effort. It's a new concept and you have to educate people. It takes a while to see results out of this. It's a motivator now in new homes, but it took a couple of years to get traction.

Dave Hutchins: It seems like the purpose of EPS is to motivate people to take action. Price is the big motivator. If you stay within the same fuel, it's going to motivate people based on costs. The CO^2 footprint will follow that. People are going to look at the bottom line. I think most people will stay with the same heat source. If the average energy score looks at the same size house based on fuel consumption, it's a good comparison.

Peter: Whatever we call this thing, a number or index, it further highlights the things you are doing to improve your house. It's like saying, "I got LEED gold."

Dave: if you changed it to a cost-based model, and the score was based on costs, carbon would follow. It would be consistent throughout the process and represent carbon accurately.

Juliet: I appreciate the complexity of what you're trying to do here. The ratepayers are paying for this, and you need to look at that part with the straw proposal. I appreciate the hard questions, too, like the fact that it is expensive to house a standard or score. You have to ask if this is really the right job for us to do. I'm not sure why this is so different from what DOE has developed. Your efforts helped them make it, so maybe your job is done. I'm not saying you shouldn't keep going forward, but it's an option to consider.

Peter: The US DOE has improved their model as a result of the pilot, but their model didn't work for us during our pilot.

Diane: We've not yet been able to test the newest version that they'll release soon.

Peter: Generally, the stakeholders and builder community responded that consumers had the most trouble with the DOE score. It was least well received. The last part was: it is a source-based number; which our electric colleagues have a problem with.

Fred: The average site BTUs/kWh for PGE is way different from Pacific Power, so getting agreement with any one version is problematic.

Don M: Right, and if a new federal administration comes in, with the stroke of a pen this could be gone. RESNET was a different animal before the government set it loose with the stroke of a pen.

Dave: Utility programs are more consistent than government.

Holly: Money is more consistent than carbon. You can tell how much it will cost to operate something over a year. The report is liked by consumers, and there's no judgment with it. It tells what you'll save, pay, still need to do, and the associated savings percentage. A score using a percentage of where you are on the savings efforts would be easy to understand. We've all wanted a high score since we were school age. Also, carbon is not in your charter.

Peter: In your scaling, one group thinks 0 is the best you can do. The path to net zero calls for a 0 score.

Holly: I'm saying 100 percent efficient house versus. 0 percent efficient.

Peter: A million BTU-only rating brings up these fundamental issues. The next step will be obtaining ideas and suggestions for how we can navigate through the fuel bias, without having to resort to source, and willingness to have a score (and remember that a percentage is an index) that can have meaning out in the market for customers. It has to show efficacy across houses of similar kinds with similar fuel types. I may choose a heat pump house, knowing it costs more, but say it gets an 80 score. The efficient gas house has an 80 with all things being equal. That would be our ideal. If those comments come our way, they will be very useful for us.

Scott Inman: From a consumer standpoint, I think the money spent and the carbon footprint are equally important with million BTUs. For Energy Trust, the most important thing is million BTUs, not carbon, right?

Peter: Energy savings are most important. Moving from a .67 furnace to .95 furnace is great, just like moving from electric resistance to a heat pump. The goal for an EPS would be to validate such investments, similarly to how LEED gold buildings have higher occupancy rates and sell at higher values. If the EPS can further demonstrate economic value, it will help drive more activity. Economists say quantification of these energy efficiency efforts is what will matter to lasting change.

Scott: Like stickers on cars, it seems like we should be able to do it, and people would get it.

Peter: Whatever we do is the next stage of getting it out there, and whatever we find, hopefully, leads to a sales tool.

Wendy Gerlitz: How much will it cost to implement? If we're stuck on the mechanics of how to implement it, but the cost is too high to begin with, why bother figuring out the mechanics?

Peter: If it's us redefining quantum mechanics, and it would cost a million dollars for us to do it, it's not worth it. If it's easily figured out by a couple of evaluation staff on the back of an envelope, it's worth it.

Juliet: Maybe you need to look for a handoff point, and look at that for implementation.

Diane: The contractor is the delivery agent. This should be a tool for contractors and realtors to use.

Wendy: How much is going to cost to deliver this system?

Diane: We are hoping to have it be just a small increment to the typical $200 it roughly costs to do the full energy audit and analysis for homes now. It's really a half hour add-on to the Home Energy Review (HER).

Holly: The sample report is basically the result of an HER, and it's fairly reliable, correct? If you can get that from 45 minutes at the house or 20 minutes on the phone, that's good.

Andria: What's the part of the report that translates to RMLS and can be sold in the market? You have to show people how to use it.

Holly: If it's the percentage of what you can do in that house, that's easy to understand. If you've done 100 percent of what you can do in that house, it's not about 100 percent of the energy bill.

Scott: Could this combine with OPower?

Fred: That's a different metric.

Holly: You still see the dollars to operate the house, but if you see a 95 percent you can feel good about it, because it's nearly as efficient as you can go. Million BTUs don't tell me if the house is tight or not.

Don M: We're going to propose that these three scores live on the RMLS, always tied together. It will move away from a score and look at consumption, cost and carbon.

Holly: How are you going to measure consumption?

Don M: How do you measure the calories that the cow ate when you order a steak?

Peter: If we counted the carbon involved, EPS is a high carbon discussion that we've run through.

Anne Snyder-Grassman: It sounds like you'll come with a proposal in April. The goal is to come to a score of some sort. PGE would like to see how you're going to operate it, or your exit strategy, if you're not. We'd like that to be woven in. Also take into account that a lot of stakeholders would like to see EPS remain, regardless of cost.

Peter: We'll consider these things. In the long run it has to live as a statewide thing and it should be out in the market, and not just ours. There will be other models, and the EPS needs to change over time as technology and customers change. That sounds like broader public policy

and not just ours to own. In other industries, the actors come together and form a consortium. If we're successful, that thing will get formed. If it becomes a tiny piece, it will probably go away.

Fred will be able to give me an estimate of costs.

5. Public comment

Don M: We recognize the spot that Energy Trust is in, and given the groups we meet with, we can help with discussions and problem solving on a personal level. We're open to offer that kind of help.

Marshall: Just a reminder that Energy Trust has an open house on March 6, and all of you are invited. If you didn't receive the invitation, you should check your spam folders to be sure it didn't get caught.

6. Meeting adjournment

Peter adjourned the meeting at 4:30 pm.

The next CAC meeting is April 18, 2012, at 1:30 pm.