Conservation Advisory Council Meeting Notes

June 18, 2014

Attending from the council:
Andria Jacob, City of Portland
Garret Harris, Portland General Electric
Holly Meyer, NW Natural
Roger Kainu, Oregon Department of Energy
Jeff Bissonnette, Citizens Utility Board of Oregon
Jim Abrahamson, Cascade Natural Gas
Juliet Johnson, Oregon Public Utility Commission
Kari Greer, Pacific Power
Stan Price, Northwest Energy Efficiency Council
Scott Inman, Oregon Remodelers Association
Wendy Gerlitz, Northwest Energy Coalition
Bruce Dobbs, Building Owners and Managers Association
Stephanie Vasquez, Bonneville Power Administration
Don MacOdrum, Home Performance Guild

Attending from Energy Trust:
Margie Harris
Kim Crossman
Paul Sklar
Jay Ward
Tom Beverly
Sue Fletcher
Debbie Goldberg-Menashe
Diane Ferington
Elaine Prause
Fred Gordon
Jackie Goss
Mark Wyman
Marshall Johnson
Ed Wales
Peter West
Steve Lacey
Ted Light

Others attending:
Mark Kendall, Energy Trust Board of Directors
Scot Davidson, Clean Energy Works
Andrea Johnson, CLEAResult
Andrew Morphis, CLEAResult
Joel Gray, Cascade Policy Institute
Jennifer Hudson, Schnitzer Steel
Brien Sipe, CLEAResult
John Morris, CLEAResult
Christina Cabralas, CSG
Jeremy Anderson, WISE
Carolyn Gross, NW Natural
Carolyn Farrar, NW Natural
Jamie McGovern, Citizens Utility Board of Oregon

1. Welcome and introductions

Kim Crossman convened the meeting at 1:30 p.m. and reviewed the agenda. The agenda, notes and presentation materials are available on Energy Trust's website at www.energytrust.org/About/public-meetings/CACMeetings.aspx.

Kim indicated that the agenda for the next Conservation Advisory Council meeting on July 23 will be quite dense. Large customer funding, Quarter 2 dashboards and more are on the agenda. Staff will likely schedule from 12 to 5 p.m. The council doesn't meet in August. It's important for the annual budget and two-year action plans for next year to hear from council.

2. Old business
April Conservation Advisory Council minutes were not included in the packet in time for member review at this meeting. Council members are requested to review the minutes and contact Kim if they have any comments.

3. Savings Within Reach bill impact estimator
Mark Wyman discussed updates to the Savings Within Reach bill impact estimator. This is a tool currently being used in the Existing Homes programs. It helps customers know what the impact on their bill will be when they finance improvements and repay them on their utility bills.

Savings Within Reach is marketed by trade ally contractors. Financing includes on-utility-bill repayment, and that option is used only with Savings Within Reach qualifying measures. On-bill repayment is ideal for smaller improvement projects. There is no minimum and terms go up to 10 years for loans greater than $2,500 or five years for loans less than $2,500. Staff is working with $600,000 in initial capitalization. The demonstration will continue until funding runs out or for a maximum of one year. It's available to customers of NW Natural, Portland General Electric and Pacific Power.

The estimator is an Excel workbook completed by the trade ally, and currently is not available on the website for consumers. It provides one output. The customer has to sign a written statement that they received and read it.

Upgrades include an easier interface, addition of seasonal bonuses and recognition of oil and propane as source fuels. It's a far different dynamic from a single-fuel project if they change fuels and finance on-bill. Customers save money overall, but their heating utility bill will go up significantly. The tool provides that functionality with updates. It doesn't model conversions between electric and gas.

Don MacOdrum: What are the Savings Within Reach qualifications?
Mark W: This is the moderate-income piece of Existing Homes. Savings Within Reach is targeted at households at 185 percent to 250 percent of federal poverty level. They are above the weatherization assistance cutoff, but face a significant barrier from out-of-pocket costs. It offers enhanced incentives.

Garret Harris: When a person converts from oil or propane to electric or natural gas, they can participate in your programs. Is that true with Savings Within Reach?
Mark W: With Savings Within Reach, we engage prior to measure installations. We can receive an application for a mechanical system and we'll record the original fuel type. We can claim some savings based on the assumption that they already made the decision to change to natural gas or electric heat from oil or propane and we are pushing them to a more efficient system.

Garret: If you convert the heating system and do another measure, can you still claim both incentives with this?
Mark W: Yes, a customer may also claim incentives from eligible weatherization measures in conjunction with a heating system replacement. Deemed savings for weatherization measures are assigned to the customer's replacement heating fuel source. Energy Trust's planning staff weight a range of installation environments when determining deemed savings levels, including those scenarios when a customer's mechanical equipment may be newly or recently installed.

Jim Abrahamson: With the gas furnace line blacked out, would the form be what the electrical customer sees? Two of the electric measures are replacing non-electric heat. Two different

HSPFs are shown as clearly replacing non-electric sources. Can this estimate what the fuel savings would be from those?
Mark W: It's not set up to do that. You select your current fuel source, and it would disable some choices. If it's electric, you will see electric options. If you select oil or propane it will surface natural gas and electric options as the new heat source.

Mark continued his presentation, showing examples of what the contractor would see as they are working through the spreadsheet. Staff updated the tool for new heating fuel sources for oil and propane. The choices depend on the new fuel source. The original workbook is on the bottom of the slides. In the load shifting scenario, it adds monthly costs to the loan payment. Staff has to rework it to present things in a way customers will find easy to understand. Overall cost savings will often outweigh the cost shift to the utility bill for a new heat source.

Wendy Gerlitz: I'm assuming that total interest payments are included in the totals, but they are also shown in their own box. That makes it appear that they are not included in the calculations.
Mark W: The Savings Within Reach offering is designed to be easy for customers, and underwriting is flexible, but we wanted to build awareness that it's not free money. That's why the interest is shown separately. It's included in the totals.

Holly Meyer: Have any groups tested this to see if people like it?
Mark W: Feedback has been positive so far, but testing has been limited and we haven't completed broader consumer testing. It may be a good fast feedback topic.

Scott Inman: The total interest payments are confusing. Is that total interest over the term of the loan? It shows estimated annual savings of $1,500 but is the $1,300 cost over the life of the loan?
Mark W: We are double messaging on the cost of capital, to ensure customers are aware of it, but that may be confusing. We can remove the redundancy.

Holly: I don't understand the bottom part, where it says, "Impact of the same fuel upgrade expressed as debt service – energy savings." Can you clarify it?
Mark W: It's the net impact of the bill. The customer is saving the "estimated monthly energy savings" and subtracting the monthly loan payment to arrive at the net effect on the utility bill.

> In regards to Energy Trust's fuel neutrality policy, we feel this is within the policy requirements. We are trying to show the net impacts when people use their utility bill as a means of repayment.
>
> Customers would never see the multiple simulations on this. However, we don't watch contractors when they give estimates. The tool could be run multiple times for differing comparisons.

Bruce Dobbs: What if I want to compare electric to gas. It sounds like that's forbidden.
Mark: Those options are disabled to follow fuel neutrality requirements. We are aware a contractor could compare using a different fuel type by running the analysis twice.

Holly: It sounds like it wouldn't be allowed, since the customer has to sign off prior to going forward. They could do everything but on-bill repayment if they wanted to switch, though.
Mark: We are allowing your new fuel to be your fuel of record. That utility will be the one collecting payments. For other customers it would be the utility they already have in place.

The engineering behind this is the same as the website tool. The new assumptions are around oil or propane equipment.

Kim: If you have comments, clarifications or advice, please provide those.

Jim Abrahamson: We're in this zone at the end because the policy about fuel neutrality causes strange gymnastics around a logical customer question. The program isn't set up to make the gas versus electric comparison because of policy, and the tool doesn't deal with it. It's a logical question for customers to ask.

Mark Kendall: This is a demonstration that started in the spring. What kind of check-in and verification are we planning to do? Contractors run the software and give customers the output. How much variability are we going to be checking and managing? Also, does the 5.99 percent interest rate cover the on-bill financing service costs and other costs?
Mark W: Craft3 would have more insight about the fund administrative costs. Our utility operating agreements include other costs. We do quality review on workbooks, but we don't know how people may be playing around with it. We will correct errors we see submitted to the program. We get it early enough that the customer will receive corrections before moving forward.

Mark K: The range in parameters can vary, though.
Mark W: We thought about giving more site specifics, but it adds to the challenge. It is meant to be streamlined and easy.

Scott Inman: Does the bill stay with the home, or does it go with the homeowner if they move?
Mark W: The loan can be moved off bill and serviced by ACH. It can also be handled through a fixture transfer. It's early to tell, but the Energy Efficiency and Sustainable Technology Act, EEAST, portfolio is the precedent. With that, most people seem to move it off bill if they sell the home, or retire it at the time of sale.

Garrett: How many applications have you received that show non-qualifying fuels switching to qualifying?
Mark W: It's too early to tell yet.
Garrett: Please track that and provide more information when you have it.

Wendy: If the customer has questions down the road, such as situations where they don't see the expected amount of savings, who do they call? Where are they directed by the paperwork?
Mark W: The application has the same terms and conditions as our program applications. It would have our program contact information. Service related issues are expected to come through the program, and the lender information is there for debt servicing contacts. We are working with the utilities to divert those to the resources we provide.

Andria Jacob: Is the capitalization from Craft3 or Energy Trust?
Mark W: It's split equally between Craft3 and Energy Trust.

4. Gas cost-effectiveness UM 1622 update
Fred Gordon and Juliet Johnson presented the gas cost-effectiveness update.

Fred: Juliet is covering the original Oregon Public Utility Commission request for information that Energy Trust is responding to. The handouts have more current information than what was previously posted online.

Juliet Johnson: This is OPUC docket UM 1622, Order 13-256. It has often been helpful for me to go back to the source, to see what the commission said and required in response so I can stay focused. In other words, "What did the commission require?"

> The commission granted exceptions to current cost-effectiveness guidelines for all gas measures and programs. The exceptions run through October 18, 2014. Energy Trust should take active steps before then to make gas measures as cost effective as possible, and create plans to eliminate measures that still aren't passing, won't pass or don't meet UM 551 exception criteria. Energy Trust will provide estimated benefit cost ratios for both the Utility Cost Test (UCT) and Total Resource Cost Test (TRC) for all measures which are close to or less than 1.0. If they are cost effective, what are the savings, and where would UM 551 exception criteria apply? Energy Trust was to identify proposed measures and programs to be continued and discontinued. That's not necessarily what would be accepted by the OPUC. Energy Trust is also determining what a core residential program for gas would look like. The docket schedule is listed in the presentation slides and online at www.apps.puc.state.or.us/edockets/docket.asp?DocketID=17795. Energy Trust will report by July 1, 2014. The commissioners will see the memos created by OPUC staff.
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> The public meeting is September 30, 2014. People are allowed to state their cases or correct facts in the memos during that meeting.

Jim Abrahamson: What is the concept of core gas programs? Will that be in the July 1 report?
Fred: What we'll say remains to be seen. We don't have a lot of information.

Jim: If the exceptions expire and substantial gas-saving programs drop off, I would assume the utility Integrated Resource Plans (IRPs) are adjusted. Energy Trust provides savings numbers, and if they remove measures and programs, they should also be removed from the IRPs.
Juliet: I imagine the commission would implement changes for both Energy Trust and the utilities.

Jim: I would hope the IRP savings would come out if they show up in this docket.
Juliet: It wouldn't hurt to restate that for the commission if it's a concern.

Mark K: How long after the public meeting will the order come out?
Juliet: An order typically comes a week after the meeting.

Don MacOdrum: The "societal cost" terminology doesn't seem to be here.
Fred: The societal test isn't in our information. TRC and UCT are the only tests that are in rule UM 551. So we are not planning to discuss general societal benefits in our comments. In our July 1 filing, we are giving a beginning product for the docket and not an end product. If something can't be done within this rule, that's for you, and others, to talk about. The OPUC has suggested that any discussion of changing the rule should explain what measures cannot be accommodated within UM 551 and why they are important.

Fred: The presentation includes what the OPUC asked for, and two additional suggestions. One covers some process issues, and the other relates to hedge, or risk value. Both are discussed below.

> What follows is a high-level review of the key cost-effectiveness tests in UM 551. We have covered these issues extensively with this council, including an entire workshop on these issues, so I won't delve into the details here.

The UCT for measures includes incentives as costs, and avoided utility costs plus 10 percent, as benefits. The benefits are divided by the costs. As applied to programs, the costs also include Energy Trust's program management costs and an allocated share of Energy Trust's administrative costs.

The TRC is different primarily in these two respects: it includes as costs the full costs of the measures, including the portion that consumers pay, not just the portion covered by incentives. Also, benefits include non-energy benefits enjoyed by the consumer. Carbon benefits are included in both tests to the extent that they are forecast as utility compliance costs for future regulations. If someone believes there is a higher cost to carbon, it's not included.

Next, I'll review changes we've made since the UM 1622 order to lower the cost of programs and eliminate measures.

In looking at measures, Performance Tested Comfort Systems whole-house duct sealing was the biggest thing we changed. We discontinued it because of performance issues. We attempted to do a pilot, but we had site selection criteria designed to increase average savings, and couldn't find homes that fit the right criteria. We couldn't build a big enough sample. We are now out of duct sealing for single-family homes. Duct and air sealing in mobile homes seem to be cost effective.

As an aside, there are many, many gas measures that are still cost effective. In the current draft, we list them at the end of the report.

We propose to discontinue whole-house air sealing at the end of this year. As noted below we have a pilot underway for air sealing using a different approach.

For ceiling and floor insulation, requirements for site eligibility were tightened. This has resulted in fewer qualifying sites, but more savings per site. The calculations presented today reflect these higher savings.

We have held back on narrowing eligibility for custom gas measures to avoid a seesaw effect. We currently allow measures which have a TRC of 0.7 or better as long as they pass the UTC.

Kim: We've discussed everything on this list of adjusted and eliminated measures at Conservation Advisory Council meetings over the last 18 months.

Fred: For reference in this presentation, if we have an exception, which means it is written into the rules that we can continue doing a certain measure and we have obtained specific authorization from the OPUC to do so.

The gas side of the Production Efficiency program is not presented because there are no problems presented by lower gas avoided costs. Some custom measures at specific sites may not pass, but not enough to be a concern to the program.

The gas portion of Existing Buildings as a whole is okay and passes both the UCT and TRC. Some custom gas measures are at issue. These are primarily custom HVAC and custom control measures. More sites won't pass because avoided costs went down. We

will go to new avoided costs at some date. The tighter investment limit for custom may impact some projects at large universities and hospitals.

For existing buildings, residential-type dishwashers should be removed, and were already taken out of residential programs.

Within the Existing Buildings program, multifamily has issues for all insulation measures. They are a very small percentage of the gas portion of the multifamily initiative. Some people value insulation, but it doesn't amount to a lot of the 2013 annual multifamily savings. Windows also have issues with the TRC. Energy Trust market research shows that owners invest in windows for other reasons in addition to the value of energy savings.

The gas portion of New Buildings as a whole is okay, and passes both the UCT and TRC. There are a number of issues with specific measures, which only amount to about 2.5 percent. Some of the issues reflect code changes. We need to spend some time looking at some of the data. Again we should remove the residential dishwasher measure, and also demand control ventilation. Market solutions is a series of packages of measures for small commercial buildings. There are a handful of cost-effectiveness issues for different packages. Some are with measures that are likely to cost less later, with designer experience, market volume and more competition. In a couple of cases, we believe we need to retain a measure so that the entire package reaches a threshold of savings that captures the developers' attention, for example, 10 percent of load.

The market solutions initiative is shown on the slide with no annual savings. It was just launched last year, and will be an increasing share of the program over time, but will be a lower percentage of savings.

The gas portion of the New Homes program as a whole is okay, and passes both the UCT and TRC. Builder Option Packages are mostly okay except for the one package listed on the slide which is a tiny proportion of the overall program. This is the only problem within the gas portion of New Homes.

These are all the current measures that have cost-effectiveness issues within the current gas offerings other than for Existing Homes. Based on 2013, all the measures with cost-effectiveness issues constitute 6 percent of the overall program savings.

Don MacOdrum: For that option package, is there a reduced future cost exception?
Fred: Yes, it's market transformation. As you do more of it, the cost comes down through training and practice, or it gets adopted through code.

Bruce Dobbs: Existing multifamily windows are a paradox to me. It's the most substantial way to save energy in a majority of multifamily buildings, but it's very expensive to do windows and it ends up being dropped.
Fred: We had many window measures in our program until the multifamily Business Energy Tax Credit from the Oregon Department of Energy mostly went away. There are benefits to the owner, but without someone else paying a large share of the money, few will do it.

Jeremy Anderson: On multifamily, does the TRC testing remove tax credits from the owner's cost?
Fred: It's a reduction from total cost for the TRC. We aren't dealing with it for multifamily.

Jeremy: There is an excellent tax credit for multifamily windows. The program has never been close to fully subscribed.
Fred: There is a tax credit there, but it's limited in its use, so we didn't include it. We will follow-up with you to discuss this further.

Holly Meyer: The slides from last night, and the current ones, make it look like they get an exception. The slide you have up say, "see single-family discussion."
Fred: This has been through much iteration, and is pretty dynamic. We're now proposing that these measures be addressed the same way as single-family insulation. But we're leaving this open as to the specific approach.

Fred continued his presentation. The gas side of Existing Homes as a whole has cost-effectiveness issues. One is prospective and another is retrospective. The current issue is the UCT. We are forecasting a positive TRC in 2014, so hope that issue is retrospective.

> On a gas-only basis, we've seen the 2013 program come in under 1.0 on the UCT, and the same has been true so far in 2014. Showerheads have large quantifiable non-energy benefits and helped the TRC. But the added savings were not nearly enough to bring the UCT above 1.0. We are confronting this situation now.
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> The UCT was 0.7 in 2013 and is 0.73 in 2014. The insulation measures, which will be discussed next, are not the whole picture of the Existing Homes program. Water-saving measures contribute a lot of gas savings as do water heaters, furnaces and hearths.
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> The UCT reflects all costs compared to savings from all measures. Measure savings have diminished, and that helped drive the UCT below 1.0. Our stricter requirements for ceiling insulation, which is we won't insulate if there is already a certain amount in the ceiling, has led to a 50 percent disqualification rate on proposed ceiling insulation installations. Each participant is saving more, but there is less measure throughput and no administrative savings.
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> Regional data from a NEEA survey shows that 85 percent of single-family homes has a significant amount of ceiling insulation already. We suspect that we are doing better on insulation in Oregon than the region does as a whole because we've been working on it longer and more consistently. We think we are chasing a residual market.
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> Other factors driving the UCT issue are that in both 2013 and 2014, we invested in improvements to our internal systems like IT, web forms and so on, to create efficiencies that may lower costs later. This may result in some productivity gains, but they are good only for a few percentage points.
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> In this way we changed several measures to change the TRC, but it didn't provide change for the UCT.
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> Also, in the current gas avoided cost forecasts, there is no risk premium or hedge value. We may not fully value the benefits of efficiency for gas in the way we do for electric savings.
> I will now review single-family gas weatherization measures and their cost-benefit performance.
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> Insulation measures don't pass the TRC by wide margins. Ceiling insulation comes in with roughly half the benefits of costs. Other insulation measures have benefit cost ratios

of 0.2 or 0.3, depending on if you look at the whole program or the standard track where the average cost of the measure is lowest.

Moderate-income furnaces, hearths, windows and aerators are a bigger piece of the gas portion of the Existing Homes savings. Insulation is process and labor intensive, and doesn't pass.

Wendy Gerlitz: The program doesn't pass the UCT, but I don't see measures which don't pass as a large proportion of the program.
Fred: When we perform benefit cost tests for individual measures, we don't include a share of program management and administrative costs. Generally, programs don't depend on a single measure so those costs will be there either way. When we perform the benefit cost tests for a program, we include program management costs.

Additionally, we don't usually deduct savings for free riders when performing benefit cost tests for individual measures. Those numbers tend to bounce around, and sometimes the information is more reliable if viewed in aggregate. If a measure has a sustained high level of free riders we will still pull it from the program.

Existing Homes measures need to come in at an average TRC somewhere between 2.0 or 3.0 for the program to pass after program management costs, administrative costs and free riders are considered.

Wendy: Are they fairly typical on costs, or is this an expensive program?
Fred: This is a high touch, high administrative cost program, so it costs more to run.

Bruce: Is ceiling insulation passing for electric savings? Is this only gas?
Fred: This is just for gas.

Fred continued his presentation. As mentioned previously we are proposing that we sunset whole-house air sealing after 2014. We hope we can transition to a prescriptive approach to air sealing at the time that ceiling insulation is installed. We are doing a pilot through the heating season to see how well it works. Depending on the benefit cost ratio that we forecast based on that pilot, we may need to come back to the OPUC to see if we can carry it forward.

ENERGY STAR 0.67 to 0.70 Energy Factor water heaters don't pass the TRC. This measure is due to become a market minimum under federal standards soon. We want to hang onto it until the standard is implemented in the field, because federal standards have often rolled back. We think that providing success in the field with this measure increases chances that the standard will be put in place.

Solar water heating has been under a proxy, but this is now not the OPUC's preferred approach. The proxy was based on market research showing many other reasons customers install the measure. Spa covers work for electric but not gas. We want to keep it for consistency.

There has been much discussion of consumer non-energy benefits. The appendix to our report provides some documentation of these benefits. The OPUC has the option of considering an exception on the basis of these benefits. The appendix will show what other states have done, and will pull out facts from other studies. This appendix will not discuss broader benefits to Oregon or society, such as additional value of carbon reduction or job benefits. Our instructions are to work within the rules and not focus on

economic development and the like, which fall outside of the scope of UM 551, the OPUC's cost-effectiveness rule.

There are two proposals for a streamlined process for granting cost-effectiveness exceptions. The proposed streamlined exceptions process would delegate some authority to the Energy Trust planning staff with guidance from the OPUC. We are hoping for ways to shorten the supply chain. The OPUC has the option of considering these ideas through the cost-effectiveness docket or separately.

Finally, we offer some discussion of gas hedge, premium, or risk value. There are a couple of basic ideas behind this. If you lower the gas load, the marginal cost of gas to the utility may decrease, which benefits ratepayers. Also, there is a lower risk of very high costs if gas loads and prices grow more than expected. NW Natural plans to study hedge value through its IRP process in 2015. Gas price forecasts have varied extensively over the last 10 years and the price is difficult to predict.

Until there is a conclusion on this issue, we suggest that the OPUC allow measures and programs with TRC and UCT benefit cost ratios somewhat below 1.0.

Don MacOdrum: 20 percent was mentioned. How does that tie to the benefit cost ratios?
Fred: We saw that Massachusetts has a higher premium gas value that, if applied to Oregon avoided cost forecasts, would bring measures to around a benefit cost ratio of 0.8 to 1.0. That's probably not appropriate as Massachusetts starts out with much higher forecast avoided costs. But it provides an estimate of what the highest value might be.

Carolyn Farrar: Do the environmental benefits have costs added in Massachusetts?
Fred: They are a state of detail. They have separate, specific adders for all sorts of things. That involved $15 million in research and selection of values within a wide range of uncertainty. We've learned that trying to pick numbers with a huge variance is not a preferred approach for the OPUC. The exceptions process provides for qualifying measures without doing this.

Holly: With a 0.7 UCT, that's concerning. If you didn't have gas and had only electric, the electric utilities would have to carry the burden of costs.
Fred: If they had to carry it, we would have very different programs. PGE and Pacific Power ran individual electric programs before Energy Trust came on the scene.

Holly: It's benefitting the same people, so maybe we don't look at TRC, and combine the utilities. If you took away gas it would burden electric more.
Fred: If you look at the gas portion of the New Home and Products program in combination with the Existing Homes program, the combination passes both UCT and TRC. There are some measures for Existing Homes in the New Homes and Products program, such as refrigerator retirement. We allocate program management costs and administrative costs to electric and gas portions of programs in a way that more electric incentives reduces the gas benefit cost ratios. The allocation method is based on generally accepted accounting practices. These may not be flexible.

Jim Abrahamson: I'm back to the original data dump. Will there be numbers associated with administrative and program costs allocated out?
Fred: We already have that in our budgets, published on our website, so yes, we can do that.

Kari Greer: Are you going to say what exception applies and why in the report?

Fred: Where there is background research, we will reference it. Where we have that we will add it in.

Don: It sounds like the electric side is generally cost effective, but not as large as the gas?
Fred: It's true for insulation, and it is quite cost effective.

Don: Does having the gas program help with customer acquisition in the electric program?
Fred: We have designed a program with a lot of outreach, customer service and the like. Prior to Energy Trust, PGE and Pacific Power ran more responsive programs with less outreach. They were differently featured.

Jim: Cascade Natural Gas is running larger programs in Washington, ourselves, right now.
Fred: If you are asking about running it yourselves, that's on the table with the other ideas.

Holly: Do we legally even have to run conservation programs?
Fred: There are laws requiring an energy audit that is pretty useless. For electric, SB 1149 waived the audit. For gas, the OPUC staff says we are doing better than the audit so deemed our programs to be equivalent. There's a law from the 1970s that talks about caulking, weatherstripping and cold water pipe wraps, things no longer thought to be that good a program approach.
Juliet: We are looking into that. There are many, very old things on the books. Some say that programs, incentives, loans and audits should be offered. They are heavily cross referenced, but it appears there is some guidance to run these programs. We are still looking into it.
Fred: EEAST is something to look at.

Scott Davidson: You set the current situation stage and recommendations. You aren't charged to look at a number of innovative opportunities and alternatives to go forward.
Fred: We aren't looking at different tests. I think in terms of the rationale within the existing rule, weatherization has presented a tough situation. We need to look at developing a core program. Given the numbers, there are a couple of ways to go. For insulation, the non-energy benefits have to carry a large share of the costs, if that's the rationale.

Scott Davidson: Would that creative thinking happen through a coalition outside this group, or within Energy Trust?
Fred: There is thinking about how we might reduce program costs and what objectives would that meet. We need guidance on how we shape that project. We will look at what the Existing Homes program is.

Scott Davidson: I came in thinking that the exceptions would be a path to a whole-home retrofit, but the UCT findings make that difficult. When you think about the homeowner's needs, they don't have complete control over their heat source. It might be good to look at a comprehensive solution.
Fred: The OPUC will look at how gas and electric look together, and we'll give additional analysis. We are going to think about how to balance program costs against savings.

Margie Harris: When this came up before, we determined that we are the starting point for responding to the OPUC order; so we are setting the table for the dialog. We have references to other ideas and research, but we aren't going as deep as others can, as part of the process. We'll frame things up, and we want others to participate in the process with the OPUC.

Juliet: The OPUC wants suggestions, and it would be great to provide comments early and often.

Scott Davidson: I fear that one voice will not change things. We need some mechanism to collaborate on ideas to create some powerful and feasible concepts.

Juliet: Joint comments come up and grab people's attention. During the process, if people want to organize and file joint comments, it can help.

Stephanie Vasquez: The load is not as big as we thought and savings weren't as much by a quarter. What are the pieces of the pie represented by the measures?
Fred: The columns show the specific measures as percentages. Everything at issue was about 6 percent of program savings on up to 18 percent for Existing Homes in 2013. We run many programs with smaller issues than we've seen for Existing Homes. In Existing Homes insulation, we are retrofitting entirely new things, which is more expensive than upgrading replacement equipment that the customer plans to buy without us. And we're engaging in many small projects.

5. Resource assessment
Kim Crossman: The agenda item on resource assessments no longer fits with our schedule. The slides describe the results of a published study, which is available on our website at www.energytrust.org/reports under "Resource Assessments," and nothing controversial came out of it. We decided to push it from the meeting today. Please send questions or concerns to Ted Light at ted.light@energytrust.org if you read the study and have any questions or comments.

6. Residential HVAC Market Study
Paul Sklar: This is a quick update on a new study. We didn't see a great deal of change between the 2012 study and this year's. We aren't proposing any changes to residential HVAC equipment.

Holly Meyer: We've heard a lot of anecdotal evidence that a lot of gas furnaces are going back to 80 percent. Did you look at that?
Ted Light: Yes, we included gas furnaces in the study, but the findings did not support that.

Kim: This is following our agreement that we'd focus our time at Conservation Advisory Council on measures where there is a possibility of a significant change.

7. Measure update: Residential windows
Marshall Johnson: This study originated because there were observations that indicated the baselines for windows are shifting, and we haven't made adjustments to windows for a long time. We've had two tiers for a long time, and we get anecdotal evidence that there's a high free ridership rate, while our impact is low on windows. We know there's a new ENERGY STAR structure coming at the national level.

Paul: The proposed ENERGY STAR specifications are planned for January 2016. There is a prescriptive measure for U-Value 0.27 or better windows. An alternative is based on equivalent energy performance criteria as defined by ENERGY STAR, which allow slightly higher U-Values for a higher Solar Heat Gain Coefficient to get more passive solar heating. That motivated the suggested changes.

> The second motivation for change is a market study that Energy Trust hired a third-party contractor to do in the third quarter of 2013. It is part of the packet and slides.

The baseline showed two peaks in the proportion of sales from different window efficiencies from U-Values of 0.35 to 0.33 and 0.29 to 0.30.

We wanted to come up with a picture of the market that exists outside our programs to use as a baseline. To better reflect the market, we adjusted the sales date to pull out Energy Trust participants who were not free riders. This allows us to measure efficiency against the natural market baseline.

Marshall: Paul attempted to remove our influence from the data that was studied.

Paul: The market baseline is the weighted average in blue, or 0.334. The current baseline we use is 0.35. There have been changes to the program volume over time with windows. It increased in 2011 when we dropped the second measure requirement. We also entered the market with 0.25 or better windows.

To calculate savings, we are using evaluated program data from billing analysis. This information came from 2008 and 2009 data. Prior to 2010, there were few tier two windows in the program, so we used a modeled estimate from the Regional Technical Forum. The suggested change to the savings methodology is to estimate tier two savings on a straight line extrapolation from tier one. Gas savings from tier one used to be 0.29 therms per square foot. They are now 0.196 therms per square foot, due to the baseline change. With the new savings methodology, tier two savings would increase. They were 0.42 therms per square foot, and are now 0.475 therms per square foot.

Marshall: The new methodology allows us to capture greater savings for tier two windows and the incremental amount increases for tier one.

Paul: We don't use wholesale when calculating costs, so we have to convert the data from the wholesale cost estimates in the market study to retail, using the ratio of the wholesale costs from the study to the 25th percentile cost of windows installed in the program. Rather than take the median we took the 25th percentile cost. That is intended to represent the incremental cost of a basic efficient window without extra features. Market data for tier one and two are shown in the slides.

Since the costs were previously from 2009 data, they have changed, primarily for tier two. The incremental cost for tier two windows has gone up from $2.25 per square foot to $4.36.

The benefit cost ratios all pass. We calculated the Utility Cost Test benefit cost ratio to come out to 1.0 for gas heated homes. By doing that, we identify the maximum possible incentive amount. The highest levels we can offer would be $1.78 for tier one windows and $4.31 for tier two windows.

Kim: For incentive design, Planning staff is providing us with the maximum that could be offered for a measure, the ceiling. But of course, we don't want to pay more than is needed to generate activity. Knowing the maximum is an important input for the programs to determine what the actual incentive level should be to generate activity.

Marshall: We have program costs on top of that, so just because it passes doesn't mean we can set incentives at that level. This information comes in time to help with budgeting. The majority of windows in our program come in at U-Values of 0.30 and 0.29. We want installers to work in alignment with ENERGY STAR. We want the ceiling of tier two to push contractors to demand

more from manufacturers. Right now they are tooling to 0.30 and 0.29. We aligned with the Department of Energy's program before and realized it was a stretch. Our tier two was intended to drive a higher level of efficiency, but it's really a minority of program activity. By making this adjustment now, we can be ready for DOE transitions in 2016.

Paul: Energy Trust will do evaluations of these new measures. We have data accumulating for more efficient windows, and we will get more billing analysis on them. We've been in the market for quite some time, as has NEEA for electric-heated homes, and we want to look at options for market transformation for windows in gas-heated homes for Existing Homes.

> If we assume a similar market share in 2015 to 2013, the impact is minimal for electric, but more for gas. It aligns with the next generation of ENERGY STAR and recognizes the market shift.
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> Things are up in the air with the OPUC docket, so we have not settled on an incentive design yet. We are confident in the ceiling adjustment for the tier two and wanted to get that information out now. We will come back to this group later with more information.

Scott Inman: You've offered gas and electric homes the same incentives for a while, but it looks like you could offer more for electric. Did you look at that? Multifamily has different incentives.
Marshall: That's true, and we have considered offering different incentives. We looked at that for air sealing for example, and discussed it with the Conservation Advisory Council. There is an issue of how we sell that to customers and keep incentives simple. We could have higher incentives for electric.

Holly Meyer: When you put in windows and a thermostat, and bundle other things, it becomes murkier to evaluate.

Scott Inman: When you make the change, I think the percentages of better windows will increase. You talk about additional benefits from many things, but triple-paned windows have detriments. To get to 0.27 they don't have to be triple-paned.

Kim: So, to recap, Scott, you are saying that the design shift we are proposing for windows seems like it will work, and also that we could consider paying different incentives for gas and electric. Both Jim and Holly seemed to think that having different incentives for gas and electric creates new complexities that need to be considered. Is that correct?

All agreed.

Marshall: It might make strategic sense to look at different incentives for other measures. Adding more money here might increase free ridership and hurt us more.

Wendy Gerlitz: When you get to 0.25 or lower, they jump up in cost quite a bit. Would you do a tier three to encourage more efficient windows, or would it add confusion?
Marshall: The push-pull strategy is to keep the existing tier structure in place, but we could potentially add a new tier when we change to 0.27. We want to encourage people to go there. The windows market is complex, and few people wanted to give us this information. It may be more about the strategy than putting costs on it.

Scott Inman: You lost the tax credit in 2013, especially for box stores that may go backward in terms of efficiency.

Wendy: Windows are a long-term investment. If you have these more efficient ones available and the homeowner is on the verge of going more efficient, they will still get the same incentives either way. I'm not sure it makes sense from a consumer standpoint. Why spend so much more on windows if you don't get more of an incentive?

Paul: We want to look at bringing them back in at some point, but I have concerns with adding another tier.

Scott Inman: The highest efficiency is 0.22, but you add 50 percent to weight and 50 percent to wear and tear. The technology moves quickly, and who knows where it will be in five years? I'm in favor of adding another tier.

Peter West: There is always a trade-off when you're looking at a program with a UCT of 0.7. Simplicity sells, and the Conservation Advisory Council is a sophisticated audience. We sacrifice some things to reach the right audience. There are two distributors that do most of what we get in terms of savings. We have to consider that.

Fred: NEEA has been exploring an initiative to build a supply chain to get more efficient windows at volume. It's a struggle. There are things that could work out. People who care a whole lot seem to move without us so we may not need a higher incentive for these windows at this early point.

8. Public comment
There were no additional comments.

9. Meeting adjournment
The meeting adjourned at 4:15 p.m. The next Conservation Advisory Council meeting is scheduled on July 23, 2014.