CONSERVATION ADVISORY COUNCIL
Notes from meeting on July 25, 2012

Attending from the Council:
Scott Inman, Oregon Remodelers Association
Don Jones, Jr., Pacific Power
Don MacOdrum, Home Performance Contractors Guild of Oregon
Brent Barclay, Bonneville Power Administration
Charlie Grist, NW Power and Conservation Council
Stan Price, Northwest Energy Efficiency Council
Anne Snyder-Grassman, Portland General Electric
Jim Abrahamson, Cascade Natural Gas
Bruce Dobbs, Building Owners and Managers Association
Juliet Johnson, Oregon Public Utility Commission
Wendy Gerlitz, Northwest Energy Coalition
Holly Meyer, NW Natural
Theresa Gibney, Oregon Department of Energy
Jeff Bissonnette, Fair and Clean Energy Coalition

Attending from Energy Trust:
Margie Harris
Kim Crossman
Steve Lacy
Spencer Moersfelder
Adam Bartini
Ray Hawksley
Taylor Bixby
J.P. Batmale
Susan Jamison
Marshall Johnson
Peter West
Oliver Kesting
Diane Ferington
John Volkman
Fred Gordon
Jackie Goss
Andrew Shepard
Bradford McKeown

Others attending:
Lauren Shapton, Portland General Electric
Jim Cox, Portland General Electric
Jeremy Anderson, WISE
Karla Wenzel, Portland General Electric
Sarah Wallace, Pacific Power
Bryce Dalley, Pacific Power
Kari Greer, Pacific Power
Mark Gagle, Gagle's Heating
Keith Barrow, NW Natural
Jason Thorson, Fluid Market Strategies
Kendall Youngblood, PECI
Phil Damiano, PECI
Catriona McCracken, Citizens' Utility Board of Oregon
Sommer Templet, Citizens' Utility Board of Oregon
Loren Watts, Oregon Air Conditioning Contractors of America
Murali Varahasamy, Lockheed Martin
Marilyn Williamson, NW Natural
Wendy Koelfgen, Clean Energy Works Oregon
Alisa Dunlap, Pacific Power
Mark Thompson, Forefront Economics (phone)

1. Welcome and announcements
Kim Crossman, Industrial & Agriculture sector lead, convened the meeting at 1:33 p.m. She described the agenda as having a few very interactive topics on the agenda with plenty of opportunity to provide feedback. Kim outlined the agenda, including a focus on mid-year updates and a sneak peak at 2013 activities. The meeting agenda and presentation materials are available on Energy Trust's website by clicking here.

2. Mid-year update

Peter West, energy programs director, led the presentation of mid-year Energy Trust program updates.

Peter: Handouts of our dashboard results are available. We will begin with the Kick-Start bonus incentive. We began the year with a 20 percent bonus for certain commercial and industrial prescriptive and non-prescriptive measures. This was intended to be a short-term bonus to drive momentum in the absence of the Business Energy Tax Credit. It worked exceedingly well, and 2,117 projects were enrolled. The majority of those projects were in Existing Buildings, approximately two-thirds of the activity. Approximately one-third of the enrollments were in Production Efficiency. Production Efficiency projects tend to be fewer in number and larger in savings. Existing Buildings projects tend to be smaller savings and more numerous. If we hadn't offered a bonus incentive, those 2,117 projects would have received approximately $20 million in base incentives if they came in at all. The bonus cost roughly $4 million to drive the substantial savings listed. The bonus is over now, and the significant majority of the projects will be completed by the end of 2012. Some will fall over to next year. Manufacturing and the economy are heading in the right direction, so we don't see the need to continue that for now.

Peter: In terms of overall savings across all programs for this year, we expect to come in at 98 percent of stretch goal for PGE, 112 percent of stretch goal for Pacific Power, and these are net savings, not gross, 97 percent for NW Natural and 89 percent for Cascade Natural Gas. The Kick-Start bonus was uneven between utilities. It had a substantial impact in Pacific Power territory and among NW Natural customers. Only four Existing Buildings projects were assigned in Cascade Natural Gas territory. The savings story for Cascade Natural Gas would be different if they had picked up bonus projects at the same rate as others.

Peter: The Kick-Start bonus improved the slowing project pipeline in Existing Buildings for NW Natural. The New Buildings program and multifamily offerings are still running behind case. A main multifamily strategy is built around large boilers for public housing for NW Natural, and is dependent on funding from the U.S. Department of Housing and Urban Development. Projects that missed this year's HUD funding cycle are still alive for 2013, so we hope to see these delayed projects as completions next year. New Buildings savings per project came in less than expected. We will go back to these and press for further savings. Overall, NW Natural numbers look good.

Peter: Despite the overall good news, in Portland General Electric and Cascade Natural Gas territory we're lagging in Existing Buildings. We will undertake some targeted measures and customer efforts to help boost participation. For example, steam traps, restaurants and a particular parking lot lighting promotion for a set of customers with Portland General Electric. These will boost those savings and increase the probability of exceeding stretch goal for Portland General Electric, and to reach stretch goal for Cascade Natural Gas.

Kim: We are now going talk about 2013 themes and concepts. To add a little context, we haven't done our detailed budgeting yet. That is happening over the next six weeks.

Residential — Existing Homes

Diane Ferington: Regarding residential themes, there's a focus on customer and contractor engagement strategies. We want to help customers feel supported and help contractors engage with customers.

Diane: EPS, an energy performance score, is a tool for Home Performance with ENERGY STAR® contractors initially to show customers where their home falls now, and what their score would be with after completing various measures. It's a great sales tool for contractors, and will be launching as a pilot in August. The system mechanics to generate an EPS are in the testing phase. Additionally, we are launching referral codes that a contractor can add to their marketing pieces so that customers can be referred to the same contractor as they exit the online audit tool and the contractor is provided the results of the homeowners audit as a starting point for their engagement with that customer. Online forms will be fully ready for 2013. The contractor can do all paperwork, which saves administrative costs and avoids missing information. It's a great service for the customers, and also enables us to turn around applications quicker.

Diane: We are currently working on a collaborative pilot with MIT and the MacArthur Foundation, referred to as Ideas42. This involves providing specific treatments and follow through, including one treatment group that is offered additional incentives after 90 days to see which engagement strategy has the best results in actions being taken. The results could influence our strategies for next year.

Diane: Other initiatives include a lending ally expansion, a behavioral savings expansion with Opower, a transition away from instant-savings measures, while looking at where will those savings come from in the future. We're also exploring market actor collaborations, wherein organizations like Providence could drive customers into the program using the referral code mechanism, this same strategy can be used for school initiatives and a number of other innovative methods to obtain savings next year.

Residential — New Homes & Products

Diane said New Homes themes for 2013 are EPS and Live net zero, where builders achieve an EPS of zero, and are ways the program can acknowledge builders who are doing great things. The program will continue to leverage Northwest Energy Efficiency Alliance infrastructure, and ensure good use of staff resources and cost effectiveness. Diane said the program currently has an air sealing pilot underway, which if it goes well, may become a standard offering in 2013.

Diane: In Products, fridge recycling will continue, and innovative retail strategies will be a major focus. We are looking at a point-of-sale pilot strategy, including potentially adding retail outlets. We may also employ mid-stream incentives to bring synergy to the transaction with the salesperson and interested customer. Our increased efficiency levels are not finalized. We should have details available by September.

Diane: We have a market lift strategy pilot with Bonneville Power Administration to change retail stocking practices. A meeting is occurring at NEEA tomorrow with the Western Utility Collaborative to consider joining forces with California utilities on a west coast retail strategy to bring volume in exchange for sales data with the manufacturers and to share efficiencies and best practices in delivering retail product strategies.

Kim: These are preliminary concepts for all efficiency programs for next year. It's a lot. You can send your comments or questions to one of us if they are sector-specific, or you can send comments directly to me as well at kim.crossman@energytrust.org. Early feedback now becomes real ideas later.

Commercial Sector

Oliver Kesting presented a high level overview. The Commercial Sector primarily delivers through Program Management Contractors. For Existing Buildings that is Lockheed Martin, for New Buildings it is PECI. Lockheed Martin also supports multifamily offerings. PMCs leverage technical consultants and the Trade Ally Network. There are also some non-PMC program offerings such as Strategic Energy Management delivered under contract with Strategic Energy Group and Ecova, and 80+ delivered by Ecova.

Oliver: Overall themes for the sector are based on challenges we'll see in 2013. The economy is still recovering, customers are hesitant and the New Buildings energy code was upgraded, which changed our baseline. 2012 lighting standards will also change the baseline for Existing Buildings. The Oregon Department of Energy tax credits sunset, and were reinstated at a lower level with a more competitive process. To drive customers to take action, we are working on building a business case for energy efficiency. We hope to communicate to decision makers, like CFOs, what the value is of energy efficiency as opposed to other business investments.

Oliver: We are looking to enhance operations and maintenance to provide cost-effective savings with little up-front cost to the customer. We also plan to coordinate with other organizations, customers and partners for long-term strategies.

Commercial — Existing Buildings

Oliver: Existing Buildings is developing the business case through training and outreach, and to technical consultants to do more in-depth financial analysis and communicate the value of measures beyond simple payback. We are also engaging in an enhanced financial analysis pilot with 10 large customers and will work to roll the findings from the pilot into the core program. We will also develop general messaging for smaller customers.

Oliver: As far as long-term planning, we will look at expanding relationships through outreach and through our government central account manager. This may include Strategic Energy Management expansion to include capital projects, operations and maintenance, new construction and renewable energy. We will continue our emphasis on comprehensive lighting design to encourage comprehensive lighting upgrades beyond simple replacement.

Oliver: We will offer targeted incentives for specific operations and maintenance measures such as rooftop tune ups and energy management systems and will offer targeted incentives for specific markets and new technologies. We plan to continue our support of the Oregon Department of Energy and the Cool Schools program.

Commercial — New Buildings

Oliver: In New Buildings, we will continue to offer early design assistance, and will work to connect with design teams earlier for deeper and more cost-effective savings. We will also extend market specific offers such as data centers, and are launching a small commercial effort for a more streamlined approach for smaller customers. We will leverage technical specialists and training for small firms, and technical support for architects and engineers. We will also have a solar-ready offering to get designers to include solar-ready design in projects that may not be ready to actually install solar.

Commercial — Multifamily offerings

Oliver: We are expanding efforts for multifamily customers to deepen relationships, continuing to focus on direct-install measures. We initiated mid-stream incentives for clothes washers earlier this year, are launching mid-stream incentives for refrigerators and are looking at more mid-stream incentive opportunities. We're planning to capture behavioral saving through education of tenants and building occupants, and hope to expand our focus on custom projects, which will more effectively capture large projects such as boilers.

Oliver described two pilots that fall under multifamily offerings:

- MPower pilot includes leveraging a HUD grant for light touch retrofit and on-bill payments in collaboration with the Network for Oregon Affordable Housing, the City of Portland and other partners
- Memory care pilot includes comprehensive lighting design that meets new standards for senior living

Oliver outlined non-PMC activities, and said they help diversify the sector's contractor base and enable more direct oversight to emerging strategies.

- Strategic Energy Management is going well. The program is expanding its cohort approach, which currently has seven large customers in the first cohort that is expected to complete in November. The program will launch the second cohort in the fall, and likely a third in early 2013.
  Resource conservation management is under consideration; the program is developing the foundation for a pilot. This would likely be rolled out first to schools and multifamily customers.
- Other ongoing activities will continue, including 80+, Building Operator Certification and Lighting Design Lab

Oliver described the difference between Strategic Energy Management and resource conservation management. Strategic Energy Management engages long-term activity where the program hires consultants to work with champions on site, assess facility opportunities and develop a plan about how and who will be accountable to take next steps. Resource conservation management is for organizations that don't have champions in house. The program could provide funding to help hire someone, and set expectations about activities they would undertake in order to qualify for funding. More sophisticated customers would engage in Strategic Energy Management, and those that aren't quite ready for that are more appropriate for resource conservation management. Also, going through an resource conservation management offering could help bring a customer up to the level where Strategic Energy Management would be appropriate.

Kim: BPA has similar structures for energy project managers.

Brent Barclay: The lender ally network being developed by Diane. Funding can be a barrier in commercial, is there some way to leverage that?
Oliver: I don't see lenders as the silver bullet, but a potential tool that can help certain customers. We don't have a strong focus on that. We are supporting EEAST legislation through the Mpower pilot and others, but not strong focus.
Peter: We did ask numerous commercial and industrial customers; there is only a small sliver that can't see a path on their own.

Industry and Agriculture

Kim: About our themes, we have been in a heavy innovation period for this program for the last four years. We have in the last 1.5 years, after testing concepts, took many things to market and let things happen in many different ways. It is time to identify what are the best ways to do what we do, our lessons learned, and to determine the right solutions to standardize the program.

Kim: Most of what we do in 2013 is continuing what we've been doing. Our customers and our market research indicate that people are satisfied with technical services and financial incentives, so no major changes are being proposed. We don't see the need. We are in a good spot for now in this market. Delivery is working overall. We just need to continue to implement in 2013.

Kim: Our approach to these things will be to make our innovations more standard, repeatable and scalable. A pilot started yesterday for small industrial Strategic Energy Management. Fifteen small companies are participating. We will continue that test next year in a second cohort, to understand how we can best provide higher touch services to small industrial going forward. We hear from them that they need more direct help.

Kim: We are heavily focused on continuous improvement. In that, we are copying some of our customers' methods. We will tweak how we communicate, make it easier to participate and help repeat customers who account for 95 percent of our annual savings get more, deeper savings on an ongoing basis throughout.

Kim: In Production Efficiency, we continue the theme of implementing what we know how to do; 75 percent of our savings are from custom, and that will probably stay same. Custom capital is up a bit, and should continue next year, as it appears that manufacturing has largely rebounded from the recession. We had a conversation with PGE last week, and they don't see a global increase in loads from industry, though we do see some expansions and increases in the willingness to invest in capital projects. Operations and maintenance and Strategic Energy Management will be major focuses. They're 20 percent of our savings, and could grow to 30 percent as we expand to smaller industries. Also, Streamlined trade ally tracks with prescriptive and semi-prescriptive measures will continue.

Kim: There are program elements that will be tuned or evolving in 2013. Strategic Energy Management offerings will be standardized. Industrial Energy Improvement maintenance will be called Strategic Energy Management Maintenance, as we offer it to more Strategic Energy Management participants beyond just the Industrial Energy Improvement. The CORE pilot is our small industrial Strategic Energy Management pilot, and this will continue in 2013. We are working with two customers to achieve ISO certification. One will complete in Quarter 1 of 2013, and one should complete in Quarter 2. We will take what we learn from that and figure out what will be the role of the ISO 50001 energy management standard in our program.

Kim: We are working with the Oregon Association of Clean Water Agencies, they have been running a Strategic Energy Management training program for their members, which is lighter than ours, and doesn't include the direct technical support we provide, but they are bringing good training and their customers love it. We participate, but they're doing a great job driving it. It's a good model, and we'll stay involved.

Kim described program innovations:

- Comprehensive lighting design pilot is being offered in some industrial sites and the program will likely continue that. Also some customers seem fascinated with LEDs, and the program is doing some small test installations and will stay involved in that.

- Scientific irrigation scheduling was rolled out this year. Next year, the program will determine who to target to make it more cost effective. The program is building off BPA's protocol and approach.
- Refrigeration operator coaching is continuing. It was successful this and last year, and has largely replaced Kaizen Blitz as the program's primary offering for cold storage facilities. The program is getting better savings by training operators.
- Operations and maintenance blitz is a redesign of Kaizen Blitz, and will target other types of industrial systems for an intensive operations and maintenance scan to find every opportunity for savings possible. It is very comprehensive.

Kim asked if there were any questions on any of the sectors' 2013 concepts, and if this type of presentation is helpful. No comments were offered.

3. Heat pump incentive qualification

Mark Thompson of Forefront Economics joined the meeting by phone.

Peter: A quick announcement. Scott Davidson is no longer a Conservation Advisory Council member; he has resigned from NEEA to take a job at Ecova. Bill announced last time he was retiring from the Eugene Water and Electric Board. Neither organization has identified a replacement yet.

Steve Lacey, director of operations, led the heat pump incentive qualification discussion.

Steve: I am the director of operations at Energy Trust, and have been involved with the fuel switching UN1565 docket that is working through the Oregon Public Utility Commission process. Today we will discuss the heat pump incentive qualification. The outcomes of this topic will not fulfill any directory function to the OPUC fuel switching docket. It is only to provide public notification on Energy Trust heat pump incentives. Also, outcomes will not affect the Energy Trust fuel switching policy. Any changes that may come out of this will not be implemented until the OPUC docket is closed. We are looking for opinions on how to deal with central heat pump measure qualifications that have implications for customer choices. This does not apply to ductless heat pump systems.

Steve: For a brief history of the docket, it involves whether and to what extent Energy Trust should consider fuel choice in the setting of incentives. Some council members are parties to the docket. We are not proposing changes to heat pump policies at this point. We are informing parties in order to explore ways to resolve the issue without investing all the time and effort of the OPUC docket process.

Steve: Energy Trust offers incentives for efficient equipment whatever the fuel. They are incentives for high-efficiency options. Incentives are designed to help with the incremental difference between standard and high-efficiency systems. Electric heat pumps are incented. High-efficiency furnaces are not currently incented at the single-family level other than for moderate-income and multifamily customers. Most people are purchasing high-efficiency furnaces without our incentives, and a new national code standard will be in place in the middle of next year to require furnaces to have 90 percent or greater efficiency.

Steve: NW Natural has argued that heat pump incentives encourage fuel switching, which is against consumers' economic interest, sending the wrong signal to the market. NW Natural has suggested not providing heat pump incentives to gas customers. Energy Trust analysis shows

that there is little program savings impact if we were to adopt this proposal. It would affect fewer than 200 customers annually.

Steve: A Northwest Power and Conservation Council study supports gas customers staying with gas heating, and shows that going to a high-efficiency heat pump has the highest life-cycle cost of all the various heating system choices surveyed. It is Energy Trust's responsibility to inform customers of economic options and best practices. This study supports their staying with gas heat. This approach opens the door to setting incentives according to economic differences in fuels, and raises some concerns with Energy Trust. Why don't we just leave choice to consumers per our fuel neutrality policy? The market should be allowed to operate without interference. Some argue we are already interfering by offering heat pump incentives.

Steve: Another concern, how do we make these choices, when fuel prices and technology advances come in the future? How would that drive a different answer? If we go down this route, we'd have to monitor where that next incremental technological improvement would drive the economic question for us in setting incentives. We don't have adequate resources to analyze such a complex question on an ongoing basis. We are here to open the discussion and get input from council members. These will be captured in notes and sent to the OPUC for sharing in the docket. I would like to open this up for discussion with council members. We'll ask each of you the following question: Would you recommend that Energy Trust not offer a heat pump incentive to customers that are currently heating with gas?

Wendy Gerlitz: It's my fault this came up. I want people to understand why this is before the council. Being a membership organization sitting at the table at the OPUC discussing this, issues we were discussing had implications for Energy Trust policy. We were discussing things the Conservation Advisory Council had never had a chance to discuss and provide recommendations on. There are voices here without whose input I felt uncomfortable proceeding. I recommended we bring it here, as it's an important policy issue to have everyone weigh in on.

Steve: It's not a matter of fault. You are the initiator.

Bruce: It depends on the philosophy of what incentives are for. If they offset incremental cost relative to some other measure, the issue is does it cost more to put a heat pump in, and is the operating cost such that the feedback doesn't justify the additional expenditure, and therefore needs to be justified.

> From what we've seen, in most territories it's almost a push between an air-to-air heat pump and a high-efficiency gas furnace. That would argue in the case where the incremental cost doesn't pay for itself, then how long would it take to pay off the incremental cost? Does the incentive make the difference?

Steve: That's a primary element of the docket, but not why we're here. We're looking at the customer who has made the decision to put in a heat pump. We provide an incentive to go to the high-efficiency model rather than the standard. That's how we interpret our fuel neutrality policy and rationale for providing incentives on high-efficiency heat pumps.

Holly Meyer: I want to clarify, this isn't about NW Natural's economic interests, it's about the participating customers and ratepayers at large. The assumption that the customer has already made the decision to get the heat pump, we can't prove that. When you don't have parallel incentives on equipment, it's hard to say whether the customer makes the choice independently

of Energy Trust collateral and promotional materials, or if they are swayed by that to make the initial decision to put in a heat pump.

> We came into the docket having observed more and more heat pumps going in over gas furnaces. We set our assumptions on how much gas is used each year. It is inequitable for customers to see the impact of gas load migrating to electricity. We hired an economist Mark Thompson who is on the phone to look at this for us. What are the real numbers?
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> For a home with a 30-year occupancy of 1,800 square feet, we did an analysis asking what is better for the customer over the life of the asset? What about their operating costs? We made assumptions that were to the detriment of gas, and even with that the customer is worse off by $700-$3,800 depending on whether they had central air conditioning with heating or not.
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> It costs approximately $3,400-$3,600 to the energy supply system every time a system switches from gas to electricity, taking gas infrastructure into account. This is not an efficient way to use public dollars.
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> The Northwest Power and Conservation Council came to same conclusion; if they're already heating with gas, they, the customers at large, are better off to stay with gas.
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> That's why we opened the docket. It doesn't make sense to have an incentive to change to an electric heat pump. It shouldn't be subsidized with public dollars. Hopefully that makes sense. I have a one-page write up available. We don't think electric heat pump incentives should go to gas customers.

Don MacOdrum: You have one-pagers available now?
Holly: Yes. [Holly distributed the information sheets]

Don M: I'll jump in at some point

Steve: We'd love to hear more from folks, and then can open it up to non-council members.

Scott I: Logically it makes sense to me, it doesn't make sense to have a marketing piece advertising subsidizing something that's not in their, the customers', normal home owners', best interest. I agree with NW Natural. I'm not talking about greenhouse gases, that's not part of this, but it is another concept to think about. Is the purpose of Energy Trust to subsidize efficiency?

Steve: Efficiency, yes.

Mark Gagle: Your comment was wrong to say that a high-efficiency furnace and heat pump are the same cost. You don't have 100 percent efficiency on anything, but gas furnaces are up to 98 percent efficient. Our heat pumps today, with inverter tech, replace a 40-year-old gas furnace that is 50-60 percent efficient. You can put an AC unit or a heat pump on that. To take away heat pump incentives is foolish.

Steve: We're not taking away incentive for heat pumps, just for gas customers.

Mark G: You're in the Willamette Valley of Oregon. If we were east of the mountains high-efficiency air conditioners sell. Here in the valley, you don't sell high-efficiency air conditioners. You have six months that you're heating in the Willamette Valley.

Steve: Energy Trust is statewide, not just in the Willamette Valley.

Don Jones: A great point, fuel choice really gets down to customer choice. That's the essence of Energy Trust's fuel neutrality policy. What makes sense in different locations varies. Energy Trust's policy lets customers make choices. We're in support of the current policy. If this policy changes, our customers will be disadvantaged.

Steve: To address Mark's comments, our incentive is strictly on the heating side. There is not enough cooling in Oregon to make economic sense.

Anne Snyder-Grassman: PGE is not in favor of removing this incentive. There's really no need to move, given the small number of customers affected. The policy is working, and we don't want to dis-incent customers from making the efficient choice.

Jim Abrahamson: We are in favor of changing to not offering this incentive. We are right in line with NW Natural and what Holly said.

Charlie Grist: What really hangs in the balance? You now have been offering incentives for customers to upgrade to heat pumps if they're electric customers, or for customers who have decided to install electric.

Steve: We do not offer heat pump incentives for customers where the heat pump would not be the primary heating source,

Charlie: If they've chosen to replace with an all-electric system?

Steve: Right, the heat pump incentive would be applied.

Charlie: I'm trying to get a fine point on this question: Should we be spending Energy Trust money to pay for the efficiency increase portion only of a heat pump switch given they're already going to switch?

Holly: When they get letter after letter promoting features of heat pump technology.

Charlie: Customers get a lot of things from a lot of people. It's about how big the incentive is; that's what pushes them.

Steve: I think you're talking a $250 incentive to go from a heat pump to a high-efficiency heat pump. It's $450 if you're going from resistance electric. The incremental cost of going from standard efficiency to high-efficiency is $1,500-$2,000. It's a small percentage of the incremental cost to encourage going to the high-efficiency option.

Wendy: I agree with Don, and am supportive of the current Energy Trust fuel neutrality policy, but when you have an incentive on a heat pump, but no communication about the benefits of putting in a gas furnace, what message are you sending? Is this really promoting a neutral message to the customer making that choice? Customers are getting communications about putting in a high-efficiency heat pump, but not getting communications about putting in a high-

efficiency gas furnace? I have a hard time saying that's not influencing customer behavior. I think it's a true grey area.

Stan Price: We can't get into customers' heads as to why customers are doing what they do. If they're making several $1,000 changes to a house, does this small incentive really make the customer think about it differently? But customers aren't always rational. Some credit is due to customers regarding the causal link between this incentive and customer behavior.

Scott I: If I was selling heat pumps, I could use that $250 incentive as a huge selling tool to get customers to switch from gas, especially if I don't sell gas.

Mark G: I'm a gas person, but nobody wants to get rid of a gas furnace. There should be incentives for the 95 percent and above gas furnaces that 90 percent furnaces don't have.

Steve: It costs about $1,500 more for a high-efficiency heat pump versus a high-efficiency gas furnace.

Margie Harris: We need to recognize that Energy Trust was in the furnace market for many years, and helped transform that market in large measure. There are alternate ways to inform consumers of benefits of high-efficiency gas furnaces.

Charlie: The question you're asking is, does the existence of the incentive influence the market to the extent that it's somehow inequitable? It's just the existence and size of the incentive. There's not a similar thing on the gas side. Steve pointed out that those increments are constantly changing. Is the incentive distorting the market?

Holly: We contend that that is an issue. Customers are not making a fuel choice independent of the incentive when the incentives are not balanced.

Steve: That's the heart of the docket, but we're really asking whether or not we should preclude customers from making the choice to go to a high-efficiency heat pump if they're primary heat source is gas.

Holly: It's about not giving public dollars to incent that.

Jeff Bissonnette: I think Charlie's question isn't quite right. We're talking about ratepayer dollars, not public dollars. For us, the Citizens' Utility Board, there are two questions, are we incenting customers to do the economically advantageous thing, and are there better uses for those dollars to achieve more savings?

> We supported removing gas furnace incentives because the market is transformed, and we now have better uses for those dollars. We should incent customers to do things in their economic interest. In this case we're open to the argument that moving customers from gas to electric may not be in customers' interest. No matter what the consumer decides, in this case efficiency is about the same. It comes down to economic interest.

Steve: We're going to go around the table and ask folks where they stand on the question: would you recommend we not offer heat pump incentives to gas customers?

Bruce: I recommend against offering the incentive. Can we reword this to be simpler question?

Steve: Do you recommend that we offer an incentive?

Bruce: No.

Jim: No incentive for heat pump conversion.

Anne: Yes.

Don J.: Continue to offer the incentive.

Charlie: I don't think there's that strong a link between incentive and choice. I think the current policy should stand.

Stan: There are good arguments on both sides. This is a tough one. Thinking about what is in the customer's best interest, I'm leery about the specific economic rationale. People make many economic decisions that aren't rational, but that's an encumbrance on the Energy Trust system to some extent. I think it's reasonable to offer the incentive, but suggest that Energy Trust takes a proactive stance to ensure customers understand the economics so they can make an informed choice.

Brent: Keep the same policy.

Jeff: I've not yet been convinced about what's in the customer's economic interest. I don't have enough information. We need to establish that first, and the incentive policy should be driven by that.

Theresa Gibney: We have a long-term plan to engage on fuel switching. As such, we have no position on this issue.

Holly: We've extrapolated how many customers this would affect over the life of the program. We're looking at a $5 million to $6 million cost over the life of the equipment. That's the opposite of what we want to do with energy efficiency. NW Natural is absolutely opposed to giving this incentive to gas customers.

Wendy: We do support Energy Trust's fuel neutrality policy, but I think this is a grey area, that incentives do have sway in the marketplace. Contractors say it's not in the customer's economic interest to install heat pumps for gas customers. Energy Trust materials should encourage customers to do the most cost0effective thing. Omit the incentives.

Juliet Johnson: Abstain.

Don M: I see it as just an incentive to upgrade efficiency. In that case I don't see it's an issue of whether or not they switch. We support continuing the current incentives.

Scott I: If it was discontinued it'd be interesting to see if they still upgraded, but I think we should discontinue the incentive. I also think you should look again at re-introducing a furnace incentive based on newer furnace technologies.

Steve: Thank you all. That took longer than I'd planned. It's a hard topic.

Margie: I suggest you follow the docket. There is a lot of information on the record. UM 1565, it's an open docket.

Break from 3:13 – 3:20 p.m. Kim postponed the 2011 Fast Feedback survey agenda item to September due to time constraints.

4. Gas weatherization cost effectiveness

Kim introduced Fred Gordon. Fred presented on gas weatherization cost effectiveness.

Fred: This will be a discussion of various measures which are not passing the societal test. The gas component of the Existing Homes program as a whole isn't in the simplest way cost effective. A lot of my presentation will cover how we came to this conclusion. We'll go through the drivers of cost effectiveness.

> This is about gas and weatherization. We do about $150 million in efficiency, maybe $30 million of that is gas, and weatherization is about half of that. There are other gas measures that don't have cost effectiveness issues.
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> We'll talk about measures, and a draft of our proposal to the OPUC. We will ask for your feedback, and will refer you to the process for decision making at the OPUC.
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> Thank you to Elaine Prause for coming with this. To summarize at a high level, savings are lower than expected, the costs of weatherization are higher and long-term avoided cost forecasts, the cost of gas that conservation avoids, are going way down. It's about the societal test, the primary investment test for efficiency under OPUC guidelines. The test considers the combined benefits to the participant and the utility system and compares them to the combined cost of savings to the participant and Energy Trust costs.
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> If the benefits are bigger than cost you may do it. If they are smaller, you don't. There are some exceptions.
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> Costs do include future costs of carbon compliance. These are forecast as part of utility costs. Current forecasts have compliance costs starting in 2017 or later.
>
> There are customer safety and comfort benefits, which are difficult to quantify, but could be included if they could be quantified.
>
> There are economic costs and benefits that are not to the utilities or participants, like broader economic benefits such as jobs, that are excluded from the benefits and cost for the societal test.
>
> For costs of measures, we tried to look back at the entire invoice cost of the measures going back a couple years. Costs have been going up significantly over the last few years. Energy Trust doesn't control invoice cost; the market does. We can offer an incentive. We don't entirely know why costs have changed, but they have. Our data isn't perfect, but it's getting better.
>
> Possible reasons are material costs have increased, probably labor, too. We have been promoting weatherization heavily, which may have increased customer willingness to pay.

> Customers don't have a clear idea of energy paybacks. We don't tell vendors what information to give customers.
>
> We spent a lot of time evaluating savings (slide). Our three-year evaluation is robust. It has been reviewed by independent experts and the Evaluation Committee of the Energy Trust board, which is attended by additional evaluation experts. We've benchmarked our results against Avista evaluations, and we feel we're in the right ballpark.
>
> We excluded one contractor with large volume and very poor results.
>
> A caveat is there is only one year of reliable sample for air sealing. Evaluation results are only through 2009, improved air sealing training may have made a difference more recently.

Fred referring to a slide on single-family measure savings: In a nutshell, savings are lower, and we're not sure about air sealing.

Fred referring to a slide on why savings have changed: We have less experience with estimating gas savings versus electric. It depends on individual home details, and exactly what the contractor does. Customers continue to better manage their loads, meaning there is less gas usage than years ago, so the savings per measure are less. We can't perfectly predict anything.

Fred referring to a slide on avoided cost of gas: Each two to three years we try to update our avoided cost forecasts. We are due to do this next year. These are based on the forecasts filed by Oregon's gas utilities. NW Natural's 2011 update is 45 percent lower on average over 20 years. We extrapolate to 45, but that's just a flat straight line real cost assumption beyond 20.

> In NW Natural's draft 2012 forecast, the front-end is lower because of the glut of cheap gas in the market right now. Energy Trust will consider the 2012 forecast after it's finalized. There is still some discussion of reliability value of efficiency and related issues.

Charlie: If you wanna win you gotta skate toward where the puck's gonna be.

Fred referring to a slide on avoided cost comparison: It has changed a lot at the front end, and will change more in the future.

Fred referring to a slide on why avoided costs have changed: We're speculating. Partly due to the glut of gas from fracking, partly due to lower consumption per home and partly the economic slowdown. This is a huge change with many, many uncertainties which cloud the picture.

Fred: With new avoided costs more gas measures have societal test issues.

Fred referring to a slide on societal benefit/cost ratios with NW Natural's 2011 avoided costs: For duct sealing, with the new evaluation, costs, and avoided costs, the societal benefit/cost ratio is 0.2. If you had half the cost at twice the savings the ratio would still be below 1. Air Sealing is 0.3, but based on just one year of evaluation. Wall and floor insulation is at 0.4. Ceiling insulation is at 0.7. We're checking some oddities with the solar thermal number, but it's around 0.9.

Fred referring to a slide on could these measures achieve a societal benefit/cost ratio of 1: Some measures such as ceiling insulation could with minor improvements. Some would need to increase savings, reduce cost, and avoided costs forecasts would need to increase to have a shot. You would need all three. For the program as a whole, it could potentially happen, but it's not a trivial question.

Fred referring to a slide on Energy Trust's proposed strategy: We are seeking approval to continue some, but not all, measures. Providing access to payback information for customers for typical home loads is a controversial issue we've brought up before. This would be partly to better inform our customers but may also drive more competition, which lowers cost. We are asking the OPUC whether we should take a few years to get the entire gas component of the Existing Homes program to a societal benefit/cost ratio of 1. With the new avoided costs, efforts to bring the entire program to this level might include additional measure and incentive changes, plus changes to program management, outreach and evaluation, and all aspects of the program would be reviewed.

Fred referring to a slide on UM-551 allows exceptions to the societal test: The OPUC will consider letting us submit proposals to them for proxy numbers for significant non-quantifiable, non-energy benefits.

Fred referring to a slide on the Energy Trust draft proposal: We are proposing to discontinue the current measure offering for duct sealing as of January 1, but begin a new prescriptive duct sealing pilot, where the contractors are not required to perform pre- and post-installation duct tests. We hope this will reduce costs. We would pursue this pilot in two phases, a technical test and then a market test.

Fred referring to a slide on air sealing: There is only one year of evaluation available. We hope to get the next two by the end of the year. If it looks the same these may be discontinued. If it looks better it could be a different situation.

Fred referring to a slide on floor insulation: Since the 2009 evaluation, we have increased emphasis on air sealing as part of this measure. We think there may be some increase in savings. We are also proposing to tighten eligibility standards to eliminate floors that already have significant insulation.

Fred: For windows, we hope that providing information on paybacks can lead to improved pricing. On ceiling insulation, we're very hopeful, 0.7 isn't too far from the target of 1. On EF 0.67 water heaters, we are trying to build a larger and more competitive market for this technology, and hope that reduces prices. We think there are also market transformation possibilities through codes.

Fred: With the aforementioned adjustments in mind, we request that the OPUC except the listed measures from the societal test for two years. Our reasoning is we think we can improve things. We don't want to make precipitous decisions based on cost forecasts. There really are comfort and other non-energy benefits. And we want to see the conclusion of some pilots before making determinations on other measures.

Juliet: We're getting the proposal from Energy Trust next week. We'll docket the filing, create a service list, take it to a public meeting and generate the resulting memo with our suggestions. We will be looking for Energy Trust to focus on cost effectiveness. We will write a memo with

our recommendations, which we will circulate before the meeting. We will try to incorporate comments before the public meeting. Anyone is welcome to comment, or you can come to the meeting to voice comments. It will be 30-60 days from Energy Trust's submission until the public meeting.

Fred: We're coming to you now, writing something by early next week, which is faster than usual. We have a budget process coming up. OPUC guidance on this issue is important so that we do not have to guess as we are developing our budget.

Bruce: I'm not seeing windows, are they not part of this?
Fred: Window savings are not as precisely estimated for us, but a better window looks good enough, better than 2, on the societal benefit/cost ratio, before we employ the new, lower avoided costs, so better than 1 with them. Showerheads look good, many non-weatherization things look fine, industrial no problem. Existing Buildings will make some adjustments but not at this level. This is where we need to do the most work.

Jeremy Anderson: Savings data is primarily from 2009, cost data is from 2011?
Fred: We tried to find prior references that made sense. We don't track societal costs, so we went back to see where we could find a decent reference point.

Jeremy: The issue I see is that programs aren't static. Invoice cost is not driven by cost, specifications are driven by Energy Trust and enforcement tightened up. The program in 2011 is not the same as in 2009. You're comparing costs and effects from different universes. Perhaps it's not a huge difference, but it could be 20 percent.
Fred: I agree that the program isn't static. The driver for this decision is current costs and savings. If we could have the same costs and savings, we would have used them.

Jeremy: Insulation manufacturers asked for a 20 percent price increase for next week.

Fred: For the program to meet the OPUC's investment criteria, we're going to have to think about both. We'll have to up savings and lower cost.

Don M: Is the return good on only a utility investment basis?
Fred: We pay 20-30 percent of the measure. If you look just from the utility's investment point of view it still looks pretty good. Duct and air sealing are not great. Most PUCs around the country look at societal costs. Lots of people are asking a lot of questions about how we're doing this test. It's a maturing conversation.

Jeremy: For duct sealing, by the time you discontinue testing-based air sealing it will be important to have prescriptive measures in place. The Oregon Department of Energy is opening up a discussion of revising energy tax credit measures shortly. Energy Trust should be involved in that discussion.
Fred: The prescriptive pilot will be two years, and of limited scale. Duct sealing incentives are proposed to sunset after the current this year. It's a judgment call, prospects for prescriptive duct sealing are not certain.

Stan: I'm glad Energy Trust is trying to push forward here despite clearly difficult numbers, and is getting into this two-year process to find out with a little more certainty where some of these are going to land. Over a two-year period maybe some of these cost effectiveness discussions have a chance to mature. There could be an opportunity to evaluate this kind of weatherization measure.

Brent: These numbers mask the difference in cost effectiveness for a specific participant. I hate to see people get marginalized. They'll make the best choices in cold climates; it would be good to differentiate program offers based on region.

Holly: Doesn't the first quartile capture that? (slide)
Fred: Quartiles look at cost based on a statistical sample, but the evaluation does not provide variation by house in savings. We have some data on climate, 20-30 percent difference, it's a consideration for east of the mountains.

Kim: Holly, your logic isn't off.

Fred: This is just cost per square foot. We studied the variation in cost partly to see if a large portion of the market looks cost effective. We didn't see that.

Theresa: We have costs that may be based on a higher specification, and savings we believe should be lower because they should be based on lower specifications. Maybe in different parts of the state things look better.
Fred: That is one of the reasons for hanging in there. We went through the specifications for solar water heating and saw things that we could eliminate to reduce costs.
Theresa: I'm not arguing that the specifications should be reduced; the only savings data you have today is perhaps from an inferior spec.
Fred: I've got your point.

Peter: We should get that in the subsequent evaluation.
Fred: We're hoping to get drafts early this fall.

Kim: Are there any further comments or questions?

Don J: Everybody who competes against avoided cost has a form of this going on. There is substantial uncertainty in avoided cost. That is why premiums are added for volatility. Before doing regional adjustments, see what you can do to keep thinking about it as a risk mitigation premium, to keep them going for a while. There are no perfect price forecasts.

Margie: The moment we start responding on a short-term basis we're back to "Mr. Toad's wild ride."

Fred: We also serve Clark County, Washington. Avista Gas, in Washington, has proposed ending all gas programs. Puget Sound Energy may be considering that, too. It's a time to think about how we're making these decisions. It's going to take a different regulatory path, and the Washington regulators are probably going to find a statewide way to work this out.

Holly: Clearly it's a conundrum. We don't want to advocate non-cost-effective incentives, but we're in support of the two-year reprieve you're asking for to see if there's another framework to see how we're evaluating conservation.

Jim: Cascade Natural Gas is in support of a reprieve as well. Regarding possible regional adjustments and the territory east of the mounts versus far east of the mountains, there's not a lot of support of development and implementations far east of the mountains. If there were attempts to put in regional adjustments we would probably see them in the Bend, Redmond area. They're not likely to get far east enough to really matter.

Fred: If we were to do some measures only in one area we'd have to figure out how to do that based on the potentially higher overhead.

Jim: Something dramatic might happen in the world, but I'm not betting on it.

Don M: We hope that the OPUC will be able to continue to provide incentives for as many measures as possible, also taking in to consideration comments already made to ensure we are basing decisions on the best and most current data. Our industry is based around diagnostics. Tests are critical parts of the tools of our industry. Maintaining some level of support to encourage customers to understand how their homes are performing, we're very interested in helping continue that. We will definitely be involved in the docket.

Fred: We would welcome advice in designing the next program in focusing on high-yield homes. We welcome other ideas for implementing these measures and are willing to target our pilot resources toward that.

Don M: One of the first exceptions that was suggested, non-quantifiable, non-energy benefits, we highly suggest exploring that. The NARUC convention is in town this week. A presentation called best practices identifies non-energy benefits or other program impacts, and goes into great detail. We'll be exploring all the suggestions in there. Also, I would suggest making an edit to the UM-551 statement to change to "non-quantified" rather than "non-quantifiable."

Fred: We've tried to show the importance of those benefits on participation decisions. It didn't come back as well as we thought it would. Few participants said that the health and comfort benefits or environmental considerations were a major factor in their investment decision. Many said that they were a consideration. You could think of this in hard or soft way.

Scott I: I'm for pursuing the exceptions. Personally I'm having my Home Performance review, thank you for adding this to my input on what to do, and I have gas heat. For what it's worth, I have no expectation of any type of return on investment for the money I spend, but I'm still going forward because I know I need to do that. I could buy a couch or insulate my walls and attic. I have trouble reconciling the societal test. To me it's just short-term thinking.

Holly: When energy efficiency got started the public needed more guidance on what was cost effective. Incentives pointed toward that. Today's consumer should know more about those things and they have other reasons for tightening up their house. Are we using the right threshold or framework to evaluate when we want to advocate making those improvements?

Bruce: The average house in NW Natural territory uses about 800 therms of gas per year. I don't know what repairing duct leakage saves. 10 percent equals 80 bucks a year. I could be off on that 10 percent.

Fred: Around 19 therms.

Bruce: Below that 10 percent it's really hard to justify the cost. Will the prescriptive route solve it? You can set the cost, depending on contractor pricing. It occurs to me, looking at measures that save a lot of energy but aren't cost effective, we don't do them because they don't meet the cost-effectiveness test. But if we did that in every multifamily in town we'd save millions in energy costs.

Fred: That's where the first UM-551 exception comes into play. We asked multifamily owners, and almost all had another reason to proceed beyond just the savings. The evidence was much clearer than from our interviews with single-family home participants.

Kim: Are there any final comments? These are important topics, and we really appreciate you engaging with us on them. Fred has been deeply engaged, and will continue to be. Thank you all for your attendance and consideration today. That includes the audience.

Juliet: I appreciate this forum, and that we can all come together and talk about these things. I appreciate that we're not shying away from the truth of this situation. We're working with the real current numbers and will do so going forward. It's hard to look at, but healthy.

Don J: It is important to communicate this to actual customers and clients so they can make rational decisions about large, expensive measures.

Diane: I'd like to acknowledge someone who helped. Robin Lebaron with National Home Performance Council was instrumental in making the document Don M. quoted.

5. Public comment

There were no public comments.

6. Meeting adjournment

Kim thanked all council members for their participation and adjourned the meeting at 4:21 p.m. The next full council meeting is September 12, 2012.