Conservation Advisory Council Meeting Notes

July 27, 2016

Attending from the council:
Jim Abrahamson, Cascade Natural Gas
Brent Barclay, Bonneville Power Administration
Charlie Grist, Northwest Power and Conservation Council
Nadine Hanhan (for JP Batmale), Oregon Public Utility Commission
Julia Harper, Northwest Energy Efficiency Alliance
Garrett Harris, Portland General Electric
Scott Inman, Oregon Remodelers Association
Don Jones, Jr., Pacific Power
Don MacOdrum, Home Performance Guild of Oregon
Holly Meyer, NW Natural

Attending from Energy Trust:
Mike Bailey
Karen Chase
Amber Cole
Kim Crossman
Sue Fletcher
Fred Gordon
Jackie Goss
Mia Hart
Marshall Johnson
Oliver Kesting
Scott Leonard
Ted Light
Thad Roth
Kate Scott
Kenji Spielman
Jay Ward
Peter West

Others attending:
Jeremy Anderson, WISE
Carrie Cobb, Bonneville Power Administration
Scot Davidson, Enhabit
Alecia Dodd, Ecova
Gary Heikkinen, NW Natural
Jason Jones, Ecova
Roger Kainu, Oregon Department of Energy
Nick Michel, Lockheed Martin
Adam Schultz, Oregon Department of Energy
Bob Stull, CLEAResult

1. Welcome and introductions

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

2. Announcements and old business

June meeting notes were approved with two corrections. Kim asked that the minutes reflect that Tony Galuzzo, McKinstry/Building Owners and Managers Association, attended the June meeting.

Holly Meyer was not present at the June meeting, but asked that the June meeting minutes reflect her comments on the Pay for Performance presentation.

> Holly Meyer: Why aren't capital improvements included, and should they be considered in the future? Express caution over concluding too much with a sample of one. Continue treating this offering as a pilot to ensure savings in years two and three. As Pay for Performance expands and it becomes more difficult to determine a measure portfolio,

we may consider asking for a Utility Cost Test approach—pay each year based on annual savings, somewhere below avoided costs.

Alan Meyer: Sam Walker clarified the next phase of Pay for Performance will continue as a pilot.

Kim: At the June meeting, Don MacOdrum asked how Pay for Performance achieves cost-effectiveness if the participant cost is zero, and Oliver Kesting wanted to follow-up on his response with additional detail. Energy 350 covered all capital and implementation costs up front. The customer has a three-year contract with Energy 350 to pay based on energy savings achieved. We did not review the customer's contract with Energy 350, but the cost of implementation and capital is covered under this payment structure. We performed measure-level cost-effectiveness tests based on the estimated costs and savings of each measure as provided in the proposal.

3. Updated AirGenerate remediation plan

Marshall Johnson, residential program manager, summarized the impact of AirGenerate unit failures and Energy Trust's revised remediation plan to support customers with unit failures.

From 2012 to 2015, Energy Trust provided incentives for 400 AirGenerate heat pump water heaters through the Existing Homes program and about 100 units through the New Homes program. AirGenerate ceased operation in March 2015, and units continued to fail and customer warranties became void.

In 2015, Energy Trust and Northwest Energy Efficiency Alliance developed a remediation plan for customers who reported a failed unit. Energy Trust and NEEA split the roughly $2,000 cost to replace the unit with a General Electric water heater. NEEA's budget for this effort was exhausted in June 2016.

In 2016, Energy Trust developed a new remediation plan in which Energy Trust covers the cost of the replacement heat pump water heater when a customer reports a failed unit. This approach minimizes financial exposure, supports trade ally referrals for professional installation, and provides a less expensive option for customers who choose to self-install units. The plan is modified for AirGenerate units installed through the New Homes program by Habitat for Humanity due to the financially constrained customer base. These customers will receive replacement water heaters with a 0.95 energy factor, dues to installation location challenges for this set of homes.

Over the past year, 86 units were remediated for a total cost of $88,000 to Energy Trust and $95,000 to NEEA at an average cost per unit of approximately $2,400. With the new remediation plan, we expect about 80 to 100 additional unit failures at a cost of $700 per unit. Energy Trust will cover the sole cost of these units.

Scott Inman: How do customers know to contact Energy Trust when their unit fails?
Marshall: We expect to be contacted through a variety of pathways.

Julia Harper: We knew there was a bad batch of units manufactured by AirGenerate. Units continued to fail, indicating that there were multiple manufacturing problems. We cannot limit failures to a specific batch.

Jim Abrahamson: Does the cost include removal and disposal?
Marshall: The previous plan did include those costs. The revised plan only provides the cost of the replacement product. The customer pays for all other costs.

Holly: Customers in Habitat for Humanity homes are financially constrained. Why did they choose to install electric resistance water heaters instead of heat pump water heaters?
Marshall: Some of these homes were designed with space heating and water heating from a single unit. At this point, alternative heating systems have already been put in place and the water heater will need to be replaced as well. We wanted to consider gas as an option, but gas lines did not run to these sites.

Julia Harper summarized NEEA's role in the remediation effort. AirGenerate was a small company that developed an innovative product with multiple manufacturing and product quality issues. Since the product was first released, we now have two major manufacturers with higher quality products, and we expect additional manufacturers to continue developing that technology. NEEA frequently works with smaller companies like AirGenerate before bigger companies enter the market to refine the product. NEEA updated its checklist for monitoring new companies like AirGenerate, including ongoing monitoring of financial analysis.

> NEEA chose to intervene because the market for heat pump water heaters was emerging and the failure of these units could negatively impact the market momentum for heat pump water heater products more broadly. The NEEA board approved the budget for the first remediation plan, then declined to renew the plan because of increasing market strength and manufacturer competition.

Alan: Does the plan only cover the cost of replacement for units that Energy Trust incentivized?
Marshall: In the revised plan, we chose to serve all customers for ease of implementation, including those who received an Energy Trust incentive and those who did not qualify for an Energy Trust incentive. Energy Trust will pay the cost of the replacement product for all future AirGenerate unit failures.

Alan: I think the Board Policy Committee should have been involved in this decision.
Peter West: This decision was approved by Finance Committee and Policy Committee and Management Team.

Garrett Harris: How many more AirGenerate units are there?
Marshall: There were originally about 500 units in our service territory. Now there are 415.
Garrett: We don't know how many of those units didn't receive an Energy Trust incentive.
Marshall: Correct. There's a small pool of customers that received the upstream incentive from NEEA and didn't receive an Energy Trust incentive, and can have their water heater replaced through this update plan.

Scott Inman: It's wonderful for customers that Energy Trust is covering the cost, but I am concerned about the precedent. From the customer's perspective, Energy Trust supported equipment that failed.

Garrett: It's great that the failed units are being replaced. From the utility perspective, we should not put this much risk on customers in the future when introducing a new technology.

Don MacOdrum: I appreciate that there's risk in market transformation. Are there other examples at NEEA analogous to this one?
Julia: The NEEA board recalled one of the first front-loading washing machines based on a mildew issue. There are no other examples that had significant ramifications. We cannot guarantee this won't happen again, but we will address and mitigate the risk of future issues

through improvements in due diligence and early monitoring. If we take a zero risk approach, our programs would be much more expensive.

4. Residential savings assessment

Thad Roth, residential sector lead, provided an overview of the residential savings assessment. Results will be updated to inform and refine the residential sector assessment. In the residential sector, Energy Trust expects to receive less savings from some measures in 2017, including lighting measures due to customer acceptance and declining costs of LED lighting and showerheads due to market saturation. The residential savings assessment evaluates measures at risk, current measures that are expected to expand and new measures.

> Gas savings have been consistent from 2013 to 2016 at about 2.15 million therms, but they are expected to decrease over the next two years due to loss of market transformation savings for new home construction and reductions from showerheads due to improved code baselines. The decrease in savings is expected to represent about 30 percent of current savings, or 700,000 therms. New measures can offer savings of about 1.8 million therms in 2018, including automated controls, an expanded midstream approach for gas water heaters and targeted weatherization, expansion of existing measures and new market transformation savings for new construction.
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> Electric savings have been increasing over the last four years in large part due to lighting, which represented 58 percent total savings in 2015. The lighting market is expected to transform by 2020, if not before, at which point we would not be able to incent numerous lighting measures that are currently providing savings for the sector. Due to the volatility of the lighting market, we are developing criteria to evaluate the market using market share, incentive levels and consistent data sources as opposed to trying to forecast lighting savings over the next four years. We will use this criteria to more effectively respond to changing market circumstances on an annual basis as lighting measure savings are updated. As a result, we are not predicting how savings will change through 2020.
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> As with gas savings, we expect to increase electric savings with new measures, including a midstream water heater offering, Nest thermostats and new construction activity.

Don MacOdrum: Would changes to the Residential Energy Tax Credit undermine the cost-effectiveness of measures?
Thad: Our assumption was that nothing will change in the current landscape.

Don MacOdrum: Do you see opportunity in the cost-effectiveness and avoided costs docket at the OPUC for expanded measures and savings?
Fred Gordon: The OPUC hasn't fully developed this docket. It seems to be centered on the electric side. On the gas side, measures are already accepted as exceptions or have low benefit/cost ratios.

Holly: How do incentive levels fit in?
Fred: There's a price floor in the market. If the cost of the product is low enough, there's diminishing return to provide a smaller incentive. We want to provide a meaningful incentive.
Holly: So it's about market share and measure price.
Thad: Once we understand the annual energy savings of a product, we work with our Program Management Contractor to determine an incentive level, and then assess whether we're moving too fast or slow.

Holly: It would be helpful to see a breakout of lighting savings from the electric scenarios.
Thad: We're also looking at that perspective and will share later.

Jim: For market share, are LED and incandescent the two lighting categories?
Thad: There are four categories in specialty applications: LED, incandescent, halogen and CFL.
Jim: Broadly speaking, it seems like the main market share is CFLs.
Fred: LEDs are doing well in specialty categories, but lagging is some categories.

5. Multifamily structure design

Oliver Kesting, commercial sector lead, and Kate Scott, program manager, summarized the complexities of the Multifamily program incentive structure. Multifamily measures are primarily organized by ownership type and building structure, and different variables determine cost-effectiveness. Some measures are only cost-effective in some properties.

Conservation Advisory Council members and audience attendees broke into small groups to discuss how to reorganize and simplify the incentive structure and propose a new approach. A representative from each group summarized suggested changes.

Holly: The bulk of measures are in the five-plus unit stack category. We suggest that owner-occupied buildings move to the Existing Homes program because homeowners and multifamily unit owners consider the same type of decisions. Buildings that are not owner-occupied should receive incentives based on highest savings potential. The program would need to decide what three measures to promote to get the most savings, which may not be as cost-effective.

Jeremy Anderson: First priority should be to include all multifamily customers. Second priority should be ease and simplicity. Third priority should be to maximize savings. Owner-occupied units should move to the Existing Homes program. Condo associations are rare and should be considered Multifamily, in addition to single, small and multiplex buildings.

Bob Stull: Priorities should be ease of participation for customers and contractors, a simple incentive structure and ease of implementation. We suggest sacrificing some measures and savings to simplify program incentive structure and focus on priority measures. Incentive structure should be organized by owner type, including occupier-owned or owner-managed structure, with a second category for buildings that are stacked or not.

Nick Michel: We recommend designing for the marketplace. Five-plus stacked structures should have their own set of incentives. Eliminate measures that aren't popular and suggest organizing measures by technology, which would be simpler but could reduce precision.

Julia: We suggest removing the ownership category and retaining structure categories. Overlay new incentive structure with marketing and outreach plan to target by ownership type. Priorities are to simplify the overall structure and maximize savings.

Kim: Program staff will consider these ideas and return with a proposed approach for review.

6. Momentum savings

Ted Light, senior planning project manager, explained how Energy Trust uses the data behind Bonneville Power Administration's momentum savings work. Momentum savings are savings that occur outside of direct program interventions. Energy Trust uses market analyses that are done as part of the momentum savings work to inform programs, but does not claim market transformation savings with the data.

Carrie Cobb provided an overview of BPA's work on momentum savings, an emerging approach to measuring and counting momentum savings. Momentum savings measure the change in market average efficiencies from the baseline set by the Northwest Power and Conservation Council's Power Plan to demonstrate the momentum of the total market over time based on customers' energy choices and use. Quantifying momentum savings allows BPA to claim more savings, in complement to program savings.

> Efficiency changes the load forecast, and BPA needs to understand how to make decisions and plan for those changes. BPA has been focusing on the residential and non-residential lighting market, including residential HVAC and appliance standards.

Kim: What is the relationship between momentum savings and spillover?
Carrie: Spillover looks at why customers are doing something.
Charlie Grist: Spillover and free riders are questions for the utility in terms of worth and investment.

Holly: What is the difference between market transformation and momentum savings? Is it just a difference in baselines?
Carrie: Yes. There's a lot of overlap between the two. Momentum savings includes total market shift. For example, it will examine the whole lighting market, not just the CFL market.
Julia: When NEEA measures net market effects, we're looking at the difference that NEEA makes alone. Utilities measure changes from their own programs. Momentum savings take a comprehensive look across the region.

Don MacOdrum: Is there a scenario where momentum savings could be used to prevent investments in energy efficiency based on free riders?
Ted: Planning might use underlying market data to understand our baseline. Depending on technology, we could use momentum savings data to inform whether or not to invest in a program.
Julia: It's a way to understand what's happening in the market.

Jackie Goss: One of the main purposes of research is to have the results on a measure-by-measure level. Is the momentum savings data public?
Carrie: Yes, the data is on our website. If there's a particular measure you're looking for and it is not on our website, BPA or NEEA might have it.

Charlie: This is great work, but it hasn't been widely reviewed. The Regional Technical Forum created a market analysis subcommittee and will examine momentum savings further.

7. Public comment
There were no additional public comments.

8. Meeting adjournment
The next scheduled meeting of the Conservation Advisory Council will be on September 7, 2016, from 1:30 p.m. – 4:30 p.m.