Conservation Advisory Council Meeting Notes

August 2, 2017

Attending from the council:
JP Batmale, Oregon Public Utility Commission
Warren Cook, Oregon Department of Energy
Julia Harper, Northwest Energy Efficiency Alliance
Don Jones, Jr., Pacific Power
Garrett Harris, Portland General Electric
Lisa McGarity, Avista (by phone)
Holly Meyer, NW Natural
Tyler Pepple, Industrial Customers of Northwest Utilities
Allison Spector, Cascade Natural Gas
Stan Price, Northwest Energy Efficiency Council
Oliver Kesting
Andrew Lunding
Connor Morrow
Jay Olson
Thad Roth
Kenji Spielman
Cameron Starr
Scott Swearingen
Julianne Thacher
Nicole Theodoulou
Sam Walker
Katie Wallace

Attending from Energy Trust:
Adam Shick
Mike Bailey
Ryan Crews
Hannah Cruz
Lindsey Diercksen
Sue Fletcher
Andy Griguhn
Fred Gordon
Jackie Goss
Kati Harper
Susan Jamison
Marshall Johnson

Others attending:
Alan Garcia, NW Natural
Lindsey Hardy, Energy Trust board (by phone)
Rick Hodges, NW Natural
Brian Lynch, Alternative Energy Systems Consulting
Don MacOdrum
Alan Meyer, Energy Trust board
Lonny Peet, Nexant
Blake Shelide, Oregon Department of Energy
Kerry Shroy, Avista (by phone)
Bob Stull, Ecova

1. Welcome, Old Business and Short Takes

Hannah Cruz convened the meeting at 1:32 p.m. The agenda, notes and presentation materials are available on Energy Trust's website at www.energytrust.org/about/public-meetings/conservation-advisory-council-meetings/.

Hannah reviewed the dates of the remaining 2017 Conservation Advisory Council meetings. Some dates have been changed to allow additional staff time to develop the Energy Trust 2018 Budget and 2018-2019 Action Plan. Revised meeting dates are Wednesday, September 13, Wednesday, October 25 and Friday, November 17. Hannah reviewed key dates for council members to learn about and provide input on Energy Trust's 2018 Budget and 2018-2019 Action Plan.

Julia Harper joined the meeting at 1:40 p.m.

2. Residential Sector Request for Proposals Results

Thad Roth, residential sector lead, reviewed the results of and next steps for the residential sector request for proposals for a Program Management Contractor and Program Delivery Contractors. The

board of directors approved the staff recommendation for a residential PMC, Retail Midstream Promotions PDC and EPS Whole-Home New Construction PDC.

Thad reviewed the current structure of the residential sector, as well as the revised new structure to be implemented beginning January 1, 2018. The new structure better matches available energy-efficiency resources, and enables the sector to more flexibly and nimbly adapt to changing markets.

Holly Braun: Will there still be three programs, but the PMC will manage all three programs?
Thad Roth: Yes, and the two PDCs will also deliver savings for specific measures. The PDCs will provide subject matter expertise for retail lighting and EPS.
Holly Braun: So one PMC will do everything except for EPS and retail? The PMC will do all measure development, customer service, marketing and outreach?
Thad Roth: Yes. The PMC and PDCs will work in close coordination as will be required in the contract scopes of work.

Don Jones, Jr.: The retail PDC will work with the PMC on measure development and determining savings opportunities and appropriate incentives?
Thad Roth: Yes.

Thad described a robust response to the RFP, including four PMC proposals, two PDC retail responses and three PDC EPS responses. Scoring criteria included cost and energy savings; strength of proposal; strength and cohesion of team; collaboration; and diversity, equity and inclusion. The review team included Energy Trust staff, a representative from Northwest Energy Efficiency Alliance and a diversity and equity representative.

The board approved the staff recommendation for a PMC contract with CLEAResult, a PDC Retail Midstream Promotions Contract with Ecova, and a PDC EPS Whole-Home New Construction contract with TRC.

Thad reviewed next steps. Transition contracts will be signed by September 1. Onboarding and transition tasks will occur by November 15. Key relationships will be transferred by December 15, and 2018 and 2019 contracts will be signed by December 22.

Don Jones, Jr.: Can you please summarize the board's thought process on recommendations?
Thad Roth: Board members were comfortable with the RFP process and supported the results.
Alan Meyer: The concept of simplifying the program makes sense, and the RFP process was well run. We trust staff to make good decisions.

Don Jones, Jr.: With the new contract structure, are there any activities currently performed by Energy Trust staff that can be transferred to a PMC or PDC?
Thad Roth: Managing one PMC contract is expected to take less staff time than managing three PMC contracts. We also anticipate the cost of total program delivery to decline with the new structure and contracts.

3. Quarter Two Highlights

Thad Roth presented highlights from quarter two and early projections for 2017 annual results, with input from Oliver Kesting, commercial sector lead, and Lindsey Diercksen, senior industrial program manager. Official quarter two results will be submitted to the Oregon Public Utility Commission on August 15, 2017.

Thad Roth described overall energy-efficiency results through June 2017 for the organization. Energy Trust exceeded historical savings in Portland General Electric and Pacific Power territories, and expects savings in these territories to exceed year-end goals. In natural gas utility territories, savings are in line with historical savings. Energy Trust expects to meet goals in Cascade Natural Gas and Avista territories, and to achieve roughly 94 percent of goal for NW Natural territory. Staff is coordinating with NW Natural on strategies to close the savings gap.

Trends included strong lighting savings across sectors and strong new construction. A large megaproject is expected to contribute industrial savings by year-end.

Lindsey Diercksen noted that more industrial customers installed energy-efficient lighting so far in 2017, which is in part due to the growing cannabis market. Lighting in cannabis facilities is expected to represent about one-quarter of all industrial lighting savings in 2017.

Oliver Kesting shared that the commercial programs are on track to meet year-end goals. New commercial construction has been notably strong, with 100 more projects enrolled in Q2 2017 compared to Q2 2016.

Don MacOdrum: Is lighting primarily responsible for Energy Trust expecting to overachieve on electric savings in 2017?
Thad Roth: At this point in the year, yes, lighting and a strong new construction market are driving savings.

4. Factors Impacting 2018 Measure Development and Budget

Fred Gordon, director of planning and evaluation, and Adam Shick, senior planning project manager, shared updates to Energy Trust's avoided costs, Energy Trust's standard annual measure reviews and impacts of the upcoming expiration of the state Residential Energy Tax Credit (RETC). This analysis informs development of 2018 measures and budget, and information on specific measure impacts is preliminary until the 2018 annual budget is drafted and could change.

Most measures are expected to be cost-effective for 2018, but some measures will be impacted by updated avoided costs, RETC expiration, new codes and standards, expiring cost-effectiveness exceptions from the Oregon Public Utility Commission and changing market conditions.

Avoided costs of energy efficiency represent the value of energy savings to the utility system, and are used to determine cost-effectiveness. Energy Trust held a stakeholder workshop in May to discuss improvements to the method that is used to calculate avoided costs, and Conservation Advisory Council members were notified of the meeting. Energy Trust updated avoided costs in June, and the new avoided costs will be used in 2018 measure and program planning.

Key components of electric avoided costs include energy price forecasts, avoided transmission and distribution capacity deferral value, avoided generation capacity deferral value, a regionally accepted 10 percent conservation credit and a risk reduction value. Electric avoided cost updates were influenced by decreasing forecasts for future electric prices, higher generation capacity deferral values and lower transmission and distribution deferral values. Energy Trust is evaluating its current method used to value peak reduction, which currently undervalues savings from measures where a lot of the savings are coincident with peak and overvalues savings for measures with low peak coincidence.

Following the updates, electric avoided costs decreased for all load profiles and all measure lives. Measures with shorter lives were affected more. Energy Trust will not know the full extent of the impact on Energy Trust's program offerings until after measure and 2018 budget development are complete.

Don MacOdrum: Are electricity costs going down?
Fred Gordon: Electricity costs are low now, and will go up, but will not go up as high as we had previously expected.

Tyler Pepple: How do you calculate the value of avoided risk from the market?
Adam Shick: The value is provided by the utilities. It represents reduced exposure to price risk of purchasing electricity now rather than later when prices may change.
Don Jones, Jr: This value is from Pacific Power's Integrated Resource Plan.

Fred Gordon: Many of our avoided cost inputs are from utilities' integrated resource planning processes and are reviewed by stakeholders through that process.

Key components of gas avoided costs include gas price forecasts, supply and distribution capacity costs, Oregon carbon policy adder, risk reduction value and the 10 percent regional conservation credit. Line losses are not applied to gas avoided costs. Updated gas price forecasts have decreased, and NW Natural provided separate avoided cost values for distribution and supply capacity savings.

Julia Harper: Where will gas prices go relative to what they are today?
Fred Gordon: Gas prices are forecast to increase, but they are now lower than utilities had previously forecast, and the future prices are also lower than previously forecast for a long time. There is a crossover point where forecast prices are higher than the previous forecast, about 20 year out. This reflects a methodology improvement. We previously took 20 years of utility gas price forecasts, and then held the value constant in real terms for the rest of the life of measures. We discovered that some utilities forecast further out, and we used that data, which turned out to include prices above the values we had previously extrapolated.

Adam Shick: We need a 70-year forecast of prices, because Integrated Resource Planning considers resource purchases in a 20-year period, and some measures have up to a 50-year life.

Fred Gordon: The values beyond 30 years have only a modest influence on the overall price because the discount rate used in establishing value reduces the value more in later years.

JP Batmale: What is the source of the carbon policy adder?
Adam Shick: This is an input from the utility. It's consistent with IRPs.
Holly Braun: It has to do with future regulatory compliance cost.

Key outcomes for gas updates are that gas avoided costs have decreased for measures with lives less than about 20 years and gas avoided costs have increased for measures with lives greater than about 20 years. Energy Trust will not know the full extent of the impact until after measure and budget development are complete.

For measures that don't pass the Total Resource Cost (TRC) test, Energy Trust has a few options: narrow or re-structure the measure, submit the measure to the OPUC for a cost-effectiveness exception, consider a pilot or stop offering an incentive for the measure. These are program design decisions, made in consultation with Planning and Evaluation staff.

Holly Braun: Does the pilot option have to stand alone? For example, wouldn't you do a pilot to determine if narrowing or restructuring a measure is the best approach?
Fred Gordon: If it's a new measure, we don't know because we don't have enough data.

In July, the Oregon legislature discontinued the state Residential Energy Tax Credit (RETC). When there is a tax credit, Energy Trust can deduct that from the cost of the energy-efficeincy measure in the Total Resource Cost test. This means that tax credits help some measures achieve cost-effectiveness. The RETC was available for heat pump water heaters, tankless gas water heaters, storage gas water heaters, gas furnaces, direct vent gas fireplace, air-source ducted heat pumps, ductless heat pumps and residential solar systems. Without the RETC, the cost of the energy-efficiency measures used in the benefit/cost test will increase, making it more difficult for some measures to pass the test.

JP Batmale: Will Energy Trust have a better understanding of estimated impacts of RETC by September?
Fred Gordon: Yes. We'll also address this later in the presentation. It will take us longer to analyze larger and more complicated measures.

Other factors influencing cost-effectiveness are codes and standards, including an Oregon residential code update, a change in the rating system for water heater efficiency and a possible commercial code update with uncertain timing. In addition, some measures have OPUC cost-effectiveness exceptions that are set to expire, such as residential gas tank water heaters, multifamily windows and some residential new construction measures.

Holly Braun: It sounds like most measures are getting harder to pass.
Fred Gordon: This is true for electric measures but not always for gas measures.
Holly Braun: But all of these factors are pointing in the same direction of making measures less cost-effective, correct? Could you start by analyzing the measures that are impacted by RETC first, then evaluate the measures that are impacted by the other factors?
Fred Gordon: We have to do it all at once to understand the real impact. There are many factors that interact in complex ways.
Holly Braun: Will all of this analysis will done in time for 2018 budgeting?
Fred Gordon: Yes, analysis of most of the important measures will be complete. We are presenting this information to you early in preparation for when the budget and action plans are drafted and presented for your feedback.

Measures that may be at risk of not being cost-effective in the 2018 program year include packaged terminal heat pumps; whole home heat pumps; ductless heat pumps for multifamily, new homes and existing homes; gas tank water heaters; multifamily windows; some new homes incentives and residential furnaces. This is a preliminary list that could, and most likely will, change as analysis completes and programs determine their 2018 action plans.

Allison Spector: Will there be insights from the new standard practices manual with a new set of guidance on valuation of demand-side management, including looking at different ways to look at test inputs? Will this guidance influence Energy Trust?
Fred Gordon: Energy Trust has not thus far received new guidance from the Oregon Public Utility Commission based on the new National Standard Practice Manual written by the National Efficiency Screening Project. The OPUC will host cost-effectiveness workshops in the fall. We think the scope will include the issues of how to value peak that were discussed early in this meeting. Beyond that, there are many potential issues to discuss about cost-effectiveness and I'm not sure which ones will be included in the workshops.
JP Batmale: The OPUC has been talking with the State of Washington. Washington is not sure which of the recommendations it will adopt from this manual. The OPUC plans to look at components of the avoided cost methodology and bring more stakeholder inputs to the process.

Garrett Harris: Was the forecast you showed us earlier in the meeting during the dashboard presentation—specifically the 2018 pipeline forecast—adjusted to account for these avoided cost updates?
Fred Gordon: No, the cost-effectiveness analysis will only impact 2018. It will not impact 2017. Regarding the 2018 pipeline, no, we have not yet made any adjustments to forecasts as a result of updated avoided costs since we do not yet fully understand the impact of the updated avoided costs.

Alan Meyer: At the Renewable Energy Advisory Council this morning, there was discussion about RETC potentially returning in February 2018. Is it possible RETC energy-efficiency incentives could be added in 2018?
Fred Gordon: It's speculation at this point. We have to work with legislation that has become law and be prepared to adapt if policy changes.

Don MacOdrum: Energy Trust should do the analysis based on RETC going away so legislators can see the full impact of discontinuing the tax credits.
Fred Gordon: During the 2017 legislative session, some attempts to extend RETC included solar tax credits only, not efficiency tax credits. Even if something passes in February 2018, the timing of implementation would still be unknown.

Don MacOdrum: I was referencing legislative work sessions that will be held in the fall to address next steps.
Warren: This is not part of the Oregon Department of Energy's plan. We will implement the RETC sunset as the legislature determined.

Lonny Peet, Nexant: With all of these factors influencing measure cost-effectiveness, what are Planning staff doing to assess long-term energy savings forecast and longer term viability of EE programs?
Fred Gordon: It's a challenge to estimate emerging technologies, but we are looking at potential new opportunities. We have included technologies that are not yet certain, with a reduction in overall savings to reflect that not all will succeed. We are considering markets that we haven't previously thought we could reach.
Adam Shick: We also know we need to improve our electric avoided cost methodology, and we intend to work on that. In the future, when we can better evaluate the capacity of measures, we may see more value, at least for the generation capacity deferral component of avoided costs.

For the next steps, Energy Trust will complete measure development and updates in August and September. Staff will share updates with the council at September and October meetings.

Hannah Cruz: Is the level of detail and early, in-progress information from this presentation helpful?
Allison Spector: I appreciated it. It's important for our resource planning.
Holly Braun: I agree. It's important to know very early because we plan our promotions so far in advance.
Julia Harper: Thanks for not walking us through the detailed formulas.
Fred Gordon: These avoided costs will be used to work with our supply curves and may influence future integrated resource plans.

Hannah Cruz: Would the council like to have received any additional information to review prior to the meeting?
Holly Braun: Staff at NW Natural are curious about why RETC doesn't have a more straightforward impact on measures. Could you apply the RETC expiration as a first step to get a sense of direction?
Fred Gordon: That's what we've tried to provide today. There are other factors, such as moving measures upstream, that make some measures more cost-effective.
Holly Braun: Thanks. Previously I didn't hear that there were any other factors to make measures more cost-effective.

5. Sector Trends Analysis

Sector leads presented trends from 2009 to 2016 based on working savings, which do not have evaluation factors applied. The analysis will inform program budgeting for 2018.

Oliver Kesting presented commercial sector trends. The commercial sector achieved record gas and electric savings in 2016, as well as record project completions. Since 2009, the number of Existing Buildings and Existing Multifamily projects more than doubled. The sector has seen steady growth in Existing Buildings participation and offerings, and strong performance for Existing Multifamily. The New Buildings program is driven by the market and new construction cycles.

JP Batmale: What drove the Existing Buildings increase in 2016, was there a large project?
Oliver Kesting: Not necessarily, the volume of projects was the main reason for higher savings.

Oliver presented commercial incentive cost trends. Incentive cost per kilowatt hour increased for Multifamily and Existing Buildings. Incentive cost per therm declined compared to 2012 for all programs. Incentive cost per kWh and therm declined for New Buildings. Existing Buildings incentive cost per therm increased since 2014. Existing Buildings gas incentive costs for Existing Buildings peaked in 2012, which was due to large custom projects.

Market trends impacting the commercial sector included increasing codes and standards, which have been influenced by Energy Trust. This means Energy Trust needs to innovate and find more advanced program offerings. Savings opportunities are shifting from large to smaller projects. All programs are serving more small- and medium-sized customers. Since 2009, the average savings per commercial sector project have dropped by about one-half, illustrating the trend toward smaller projects. Lighting continues to drive new participation and savings in all commercial programs, given declining LED costs, a booming economy and a strong Trade Ally Network. Very large projects can influence results, such as projects with data centers.

Stan Price: Are declining savings per project driven by the number of small projects increasing or the number of large projects decreasing?
Oliver Kesting: It's a combination of both.
Stan Price: Are customers doing smaller projects?
Oliver Kesting: There are a lot more customers participating. We're not seeing as many large projects as a percentage of the total. I don't have on-hand the data to compare the total number of large projects in 2009 vs 2016.

Existing Buildings is expanding Strategic Energy Management to smaller customer sites and sites outside of the Portland Metro area. LEDs are driving big savings, but street lighting opportunities are declining. Custom projects continue to be strong. Standard incentives, especially foodservice, continue to grow. The program is focused on diversifying and recruiting trade allies.

New Buildings trends included more standard measures, which is driving down incentive costs. With Market Solutions, the program is installing more measures at smaller sites and getting deeper savings with these participants. There are more than 70 projects enrolled in Path to Net Zero. Custom building designs are becoming more sophisticated and baselines are rising, increasing costs for custom projects.

Existing Multifamily trends include low vacancy rates. This means customers have more consistent cash flow but also more competing priorities. The program is shifting focus to smaller properties. Standard track savings are up. Customers are interested in LEDs. Savings from direct installation of energy-efficient products are declining due to reduced measure savings, but still represent a significant source of savings.

JP Batmale: What's the trend in delivery costs?
Oliver Kesting: Delivery costs are increasing as we do more smaller projects and increase our effort to reach non-metro customers.

Holly Braun: You're representing LED trends as positive, but the cost-effectiveness presentation presented them as potentially declining.
Oliver Kesting: This is a look backward, and we have achieved a lot of savings from LEDs. LEDs may not offer as much energy-efficiency opportunity in the future.

Holly Braun: Is there more information on Existing Multifamily specifically?
Oliver Kesting: Yes, it's in the trends report.

Lindsey Diercksen presented trends for the industrial and agricultural sector. Lindsey summarized recent sector highlights, including the launch of a new Continuous SEM offering, new market development with indoor agriculture, strong lighting growth and increasing LED conversions, and growth of participation from small- to medium-sized businesses. As project sizes decline, it takes more projects to achieve the same level of savings as in prior years.

The industrial gas portfolio continued to be influenced by large projects, which are difficult to predict. A lot of standard track gas savings come from greenhouse upgrades.

As the program reaches small- to medium-sized customers, the number of projects has increased while the average project size for electric savings has decreased. This means electric incentives are getting more expensive. Gas continues to be lumpy, with low project volume and large cost-effective projects. The volume of standard projects has increased significantly since 2009.

Savings from indoor cannabis production have increased significantly since the legalization of marijuana in Oregon. Savings from cannabis production facilities in 2017 are expected to contribute more than double the savings in 2016. The program expects the cannabis savings to continue to grow and eventually level out, becoming more predictable. LEDs have been rapidly adopted by industrial customers—from less than 20 percent of lighting savings from LEDs in 2013 to almost 90 percent in 2016. A lot of LED opportunities remain for industrial customers. The program is evaluating the potential for integrating lighting controls into lighting projects.

JP Batmale: Would Energy Trust go back and evaluate completed projects to see if they want to add controls?
Lindsey Diercksen: Yes, but with LEDs the wattage controlled per fixture is less and possibly not cost effective when upgrading to an integrated control system.

Tyler Pepple: What's the difference between an occupancy sensor and a vacancy sensor?
Lindsey Diercksen: Both will turn off the lights when a room as been unoccupied for a certain amount of time. An occupancy sensor will turn the lights on automatically when a person enters the area; a vacancy sensor requires a person to manually turn on the light in the space. The type of sensor depends on how the space is used.

The first projects industrial customers engaged in were by far prescriptive projects and lighting upgrades.

JP Batmale: There's a dramatic drop in cost of gas incentives from 2009 to 2016. Why is this?
Lindsey Diercksen: This has to do with very large projects with low run-rates.

Thad Roth presented trends for the residential sector. The analysis was based on residential efficiency technologies. Electric savings have increased over time, especially for lighting, HVAC and new construction. Savings declined for appliances resulting from Energy Trust's success in market transformation and removing inefficient refrigerators from the market. NEEA has contributed roughly 20 to 40 percent of residential savings in the last few years.

Electric water heating savings are from showerheads and faucet aerators as well as water heaters. The program had limited success in the heat pump water heater market, and is now promoting midstream incentives to increase heat pump water heater savings. Savings from showerheads are also expected to decline because of market saturation. Gas water heater savings are primarily from showerheads and faucet aerators.

Tyler Pepple: If you assume you'll reach market saturation for LEDs, will LEDs no longer contribute to Energy Trust savings at some point?
Thad Roth: Yes. We claim savings based on Energy Trust's influence on the market.

Residential gas savings have been more variable. Gas savings were bolstered by weatherization and federal American Recovery and Reinvestment Act funds in 2011 and 2012. The primary drivers for gas savings have been market transformation and new construction, which represent roughly 45 percent of residential gas savings. This reflects the robust economy.

Cameron Starr: When you look at air and duct sealing, does that include single-family and manufactured homes?
Marshall Johnson: Through 2012, it includes both single-family and manufactured homes. After 2012, it is single-family homes only.

Electric HVAC savings have increased, especially for ductless heat pumps. Savings from ductless heat pumps seem to have plateaued and are under some cost-effectiveness constraints. Gas HVAC savings, while small, increased significantly in 2016 due to midstream and downstream gas fireplace incentives. There are also new opportunities with smart thermostats and Nest Seasonal Savings.

Don MacOdrum: What is Seasonal Savings?
Marshall Johnson: It's a thermostat optimization algorithm that Nest can deploy to thermostats installed in homes. It makes minor temperature adjustments to help customers save energy.
Don MacOdrum: Is that demand response?
Garrett Harris: Demand response is about reducing energy during short windows of time when energy use peaks, such as on hot weather days. This technology does both demand response and energy efficiency.

Savings Within Reach offerings for moderate-income customers have transitioned over time from weatherization to HVAC systems, such as ductless heat pumps and gas furnaces. The number of Savings Within Reach HVAC upgrades grew from a handful in 2009 to 300 in 2015 to more than 800 in 2017.

In 2016, roughly 4,500 homes have been built with EPS. This is due to a strong new construction market, engagement with builders and increases in energy savings per home. New construction gas savings are comprised of both new EPS home construction and market transformation, which reflect Energy Trust's influence on building codes.

Holly Braun: Since the residential building code didn't change for six years, what code have you influenced through market transformation?
Thad Roth: Codes changed in 2008 and 2011. Energy Trust claims savings for homes built after code changes that did not participate in EPS.

6. Public Comment
There were no public comments.

7. Meeting Adjournment
The meeting adjourned at 4:25 p.m. The next scheduled meeting of the Conservation Advisory Council is September 13, 2017. Topics will include potential measure changes, rough drafts of program budget action plans and corrective strategies to reduce PGE large customer expenditures.

Holly Braun: This was lot of information, but it's helpful as we start to think about the budgets. When you present budget concepts, can you reference the trends reports to help us make the connections?
Hannah Cruz: Thank you, we'll consider that suggestion.