Conservation Advisory Council Meeting Notes

April 20, 2016

Attending from the council:
Jim Abrahamson, Cascade Natural Gas
JP Batmale, Oregon Public Utility Commission
Warren Cook, Oregon Department of Energy
Charlie Grist, Northwest Power and Conservation Council
Garrett Harris, Portland General Electric
Scott Inman, Oregon Remodelers Association
Andria Jacob, City of Portland
Don Jones, Jr., Pacific Power
Don MacOdrum, Home Performance Guild of Oregon
Stan Price, Northwest Energy Efficiency Council
Gary Smith (for Brent Barclay), Bonneville Power Administration

Attending from Energy Trust:
Adam Bartini
Tom Beverly
Kim Crossman
Phil Degens
Fred Gordon
Jackie Goss
Katie Harper
Jessica Iplikci
Marshall Johnson
Steve Lacey
Spencer Moersfelder
Thad Roth
Dan Rubado
Kate Scott
Paul Sklar
Mariet Steencamp
Katie Wallace
Mark Wyman

Others attending:
Jeremy Anderson, WISE
Scot Davidson, Enhabit
Sara Fredrickson, CLEAResult
Keith Kueny, Community Action Partnership of Oregon
Brian Lynch, Alternative Energy Systems Consulting
Alan Meyer, Energy Trust board
Doug Oppedal, Evergreen Consulting
Bob Stull, CLEAResult

1. Welcome and introductions

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

Kim introduced JP Batmale as Energy Trust's new Oregon Public Utility Commission liaison, replacing Elaine Prause. Juliet Homer from Pacific Northwest National Laboratory has been invited to the next Conservation Advisory Council meeting to make a presentation about a pilot on transactive energy. Renewable Energy Advisory Council and Conservation Advisory Council members will be invited to attend. Transactive energy uses newly available two-way data to quantify and monetize the value of grid support and other benefits of energy efficiency, renewable energy, distributed generation and demand response.

2. Old business

The council approved the February meeting notes without comments or changes.

3. Saving energy in cannabis production

Adam Bartini provided information about efforts to reach the industrial cannabis production sector. This information doesn't cover residential growers or retail operations.

Adam: Energy Trust has offered standard Production Efficiency incentives and expertise to help medical cannabis facilities increase energy efficiency for several years. Energy Trust is not an expert in cannabis production, just as we are not an expert in the other industries we serve.

> Energy-saving opportunities include lighting, cooling, heating and ventilation, dehumidification, pumping and building shells. Energy Trust has completed 17 projects with average savings around 90,000 kilowatt hours each, including for replacing high-intensity discharge lighting and one custom slab insulation project. There are no projects in process for recreational cannabis growers, as business owners may be waiting for Oregon Liquor Control Commission licensing.
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> We offer incentives and services through our standard Program Delivery Contractor engagement with trade allies and customers. We participate in industry conferences, with industry associations and attend meetings with the Northwest Power and Conservation Council that include representatives of the Oregon Liquor Control Commission, Northwest Energy Efficiency Alliance, OPUC, Oregon Department of Energy and select growers. Energy Trust is also participating in the governor-appointed task force on cannabis environmental best practices.
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> We may fund some market characterization research and also aggregate existing research. There are many studies out there, but not a lot of third-party studies.

Garrett Harris: What does the market look like in terms of grower numbers and size? Where do you see it going?
Adam: There have been 579 grower license applications submitted across the state. The numbers are substantial and mostly in our territory.

Andria Jacob: What if lighting doesn't turn out to be the best measure for saving energy while growing optimal crops? Growers say that lights are very important, and many of them aren't open to using new technologies. We may miss other opportunities if we focus on lighting.
Adam: We're interested in going as deep as we can, but the focus right now is on lighting because those are the projects that are coming our way.
Kim: Lighting is 80 percent of the load. We do have to bring the whole package, but customers often come to us looking for efficient lighting.

Don Jones: We've looked at fan and pump loads for heating and cooling, but we see lighting also. Are you seeing dominant trade allies or specialty installers?
Adam: We have worked with lighting manufacturers primarily. There are some dominant lighting trade allies, but they have been slow to adapt.
Kim: They don't seem to be the same ones we work with all the time. With so many new actors, quality could become a concern.

Alan Meyer: It seems like there will be a higher than normal failure rate. Are we taking precautions?
Kim: While we do extensive project due diligence, we don't do business due diligence on normal projects, only on megaprojects. We have standard forms and terms and conditions, which are necessary because we do about 1,400 Production Efficiency projects a year.

Jim Abrahamson: You may start to see more people do amateur or boutique operations in homes that cause electric load problems. You will want to scale down to residential.
Adam: Energy Trust's residential sector will look into serving residential growers.

Warren Cook: Each of the 579 applicants had to estimate energy use. We are gathering that data with the Oregon Liquor Control Commission. We have not received any calls about efficiency, but we have received lots of calls about incentives. Energy efficiency is new for cannabis growers because they haven't defined what the baselines will be. The product is grown indoors because of legality. To say whether they'll grow more or less with efficient equipment may lead to us being in the middle of more failures.
Kim: Most growers will install then lowest-cost lighting they can get, then they will start testing other ways to reduce energy use. We'll learn along with the early adopters as they test energy-saving technologies, and we will share lessons learned with the rest of the market.

Adam: We can't vouch for specific products at this time, but we are looking at basic safety requirements and hear perspectives of other utilities and trade allies.

Charlie Grist: I think you're right to stay nimble, particularly with technologies. There is definitely going to be a lot of learning by looking at savings between one system and another. There may be opportunities to help people save energy by growing in outdoor greenhouses.
Kim: In the northern half of the state, there are mold problems with outdoor crops. Growing outside may be an option for Southern Oregon.

Don MacOdrum: Anecdotally, I was in a Home Performance Guild of Oregon member's shop earlier today and they had literature on cannabis work. I'm assuming they are already having conversations with residential customers.
Mark Wyman: From a residential perspective, we need primary data to develop a measure. If you know of folks who can provide it, send it our way.

Kim: In January and February 2016, the state collected $6.84 million in cannabis taxes—much more than predicted.

4. Multifamily windows incentives

Kate Scott, commercial program manager, presented multifamily window incentive information, sharing that Energy Trust has submitted two rounds of OPUC requests based on new analyses. She thanked everyone for their patience and input during this process.

Charlie: Were the Energy Trust estimates based on billing analysis of multifamily projects?
Paul Sklar: Yes.

Jeremy Anderson: Can you talk more about how you're defining townhomes?
Kate: The definition is based on code, which defines a townhouse as a single-family dwelling unit constructed in a group of three or more attached units in which each unit extends from foundation to roof and with a yard or public way on at least two sides. By that definition, a townhome doesn't have to be two stories but is attached and goes from foundation to roof.

Jeremy: Are single-story connected units considered townhomes?
Kate: Based on code, single-story connected units would be considered townhomes and receive higher single-family incentives.
Jeremy: So the savings estimates for stacked units are lower?
Paul: Yes.

Jeremy: I don't understand the logic for the definition of townhomes. A landlord will expect the same incentives for a single-story complex and a double-story complex. It may make more sense from a market perspective, but landlords won't replace windows on a rental property without huge incentives. An ownership model may be more logical. It's all about baseline. Owners of single-family rentals will install new windows anyway, so we want them to install more efficient windows. Owners of multifamily rentals won't do it anyway.

Scott Inman: A big, single-story complex can have individually owned units, meaning it's a townhome.
Oliver Kesting: We are applying the incentive based on building type rather than unit type.
Scott Inman: Now you're counting different structures as townhomes.
Paul: Ownership type influences decision making more than the number of units in a property. That's why we changed the definition to match code. It's not easily apparent where each building fits into the ownership types and building types. We will clarify as we go forward. We can't ignore how structure type impacts energy usage. We need to do more research about how owners make decisions.
Scott Inman: Manufacturers struggle with this, too. Sometimes a property is fined as single-family if it's owned by an individual but multifamily if it's owned by a company. Thank you for listening and being open-minded.

Oliver: We think we have something here that works for most. There will be some marketing challenges. With your input and our analysis, we have come up with something workable.
Jeremy: Something is better than nothing, but it does seem strange to change building categories after 12 years. An owner with a single-story fiveplex and a two-story sixplex will get different incentives for each building. I'm struggling with that.

Charlie: The market is constantly moving and you have financial and savings considerations. You have to balance those with program considerations. Ask yourself when you need to move to a new incentive structure. Energy Trust's job is to push things that normally wouldn't happen and make them happen without confusing users too much.

Scott Inman: This two-tiered incentive structure is new for single-family. It makes a significant difference.
Warren: We would consider looking at incremental cost on the tax credit if it makes them more available.
Paul: That would be good to look into.

Jeremy: Is the OPUC exception a staff or commission exception?
JP Batmale: It's a staff exception.
Jeremy: Will there be a public meeting?
JP: I believe this will be a staff decision, so there will not be a public meeting.
Jeremy: Staff should remember that we don't need the exception for single-pane windows anymore. We are asking for the same thing as a couple of weeks ago. The circumstance around the single-pane exception is now going to be a double-pane exception.

5. Clean Electricity and Coal Transition Plan
Jay Ward presented information about the impacts of new legislation on Energy Trust.

Jay: Senate Bill 1547, the Clean Electricity and Coal Transition Plan, requires investor-owned electric utilities to eliminate coal-fired resources from the electricity serving Oregon customers by 2035. The bill increases the Renewable Portfolio Standard to 50 percent by 2040 for investor-owned utilities. It also requires utilities to plan for and pursue all energy efficiency that

is cost-effective, reliable and feasible, and as directed by the OPUC, plan for and pursue cost-effective demand response resources before acquiring new generating energy resources

> Energy Trust will track demand response definitions as this moves into rule-making. Utilities have to submit plans by end of this year, and there is likely to be a fix in 2017. During testimony, legislators stated that they intended to cap the thermal Renewable Energy Certificates at 20 megawatts per project. They plan to return in 2017 to fix that situation. The impact on Energy Trust is unknown and will be determined through utility Integrated Resource Plans, OPUC rule-making or both.

Don MacOdrum: You mentioned the requirement to achieve all cost-effective efficiency before investing in renewable energy. What are people saying about that?
Jay: That's a known unknown. We will probably wait for the OPUC to tell us. Planning for and pursuing feasible energy efficiency and demand response comes before renewable energy generation. It feels a lot like our IRPs now. It's very open.
Kim: We are currently charged with acquiring all cost-effective energy efficiency.
Alan: The problem is, it's impossible to get all of it.
Don Jones: This is eerily similar to SB 937 language in Washington that talks about achievable and feasible.
Stan Price: I wouldn't rely on language in SB 937.

Scot Davidson: The whole discussion on transportation electrification could have a big impact. Energy Trust stands ready to participate in those plans?
Jay: Energy Trust has managed rebate plans in the past. Assuming that utilities set up rebates for charging stations, we could participate.

Charlie: How, if at all, will cost-effectiveness analysis and standards change? Do you have any sense of when that discussion will happen and how it will proceed?
JP: There are lots of priority topics. The first thing that will come out will be IRP integration. There's a report due in September about how solar should be treated moving forward. There are lots of follow-ons to this bill, including biomass. Sometime in later 2016, we will start looking at energy efficiency and avoided costs. Nobody knows where cost-effectiveness and avoided costs will go at this point.
Charlie: You think that will get taken up in 2017?
JP: I think we'll have to.

Don Jones: To a certain extent, there is a process in place through IRPs. How would you change the process you have?
Fred: There is an IRP process. The mysterious word about cost-effectiveness is before. Does it mean you will look at avoided costs if there were no increase in the RPS? It may depend on what energy resource you think you are avoiding on the margin, and how you think you are dealing with capacity.

Charlie: The cost of renewables and the effect of renewable generation on market prices are kind of like a water balloon, where you push on parts and other parts bulge out. There are integrations. The IRP model was based on least-cost strategies. Legislation directs pieces of that. Thinking about how you implement it is tough. It's happening all over the country. Legislation competes with economic models. It sounds like a multiyear process to work through the rules.
JP: It will be a 2017 process.

6. Smart thermostats

Dan Rubado presented on the gas smart thermostat pilot. Based on this pilot, Energy Trust concluded that Nest thermostats helped customers reduce gas savings while the Lyric was associated with increased gas usage. Participants overwhelmingly preferred Nest thermostats. Energy Trust is currently offering a $50 incentive for smart thermostats installed by residents. Nest is currently the only qualified product.

Charlie: Why did you use incremental costs?
Marshall Johnson, residential senior program manager: We are encouraging people to move toward a smart thermostat instead of another programmable thermostat. We're assuming someone will buy a thermostat, and we are encouraging them to get a more efficient one. We don't think average programmable thermostats save much.

Don MacOdrum: Is this an effort to try and align different pathways to measures, such as measures purchased at retail and measured installed by contractors?
Marshall: It's possible a contractor could install a smart thermostat, but we think most smart thermostats will be purchased at retail and installed by homeowners.

Charlie: You're guessing a resident will go out to replace one that failed or they don't like what they have, which doesn't happen that often. How do Nest thermostats save more energy than programmable thermostats?
Dan: Occupancy sensing saves more energy than a programmed schedule. The Nest records set points and your schedule over time. It can do both scheduling and occupancy sensing.
Charlie: It sounds like that combination of smartness works better than people manually making changes or even programming something.
Dan: Yes. With a standard programmable thermostat, you set a generic schedule that doesn't always apply. The Nest provides additional setbacks through the combination of creating a customized schedule and using occupancy detection.

Charlie: Participation is sort of automatic. They flash something on the thermostat and it collects the data. Have you looked at the data from the pilot? Can more be learned?
Dan: Nest gathers runtime data in five minute increments, but we haven't yet received it.
Marshall: Nest has observed roughly 600 hours of runtime for the air conditioning season, which is different from what our industry has historically assumed for air conditioning loads in the Pacific Northwest.

JP Batmale: How does the pilot help scale things? What did we learn in terms of program design? Will it lead to a standard? Would we take a product that doesn't provide the two things that drive savings?

Marshall: We have a screening tool that can help us add new qualified products to this measure based on customer satisfaction and third-party studies. Lyric would have been screened out since there are no other third-party studies quantifying savings. We have recently added the Ecobee to the qualified products list. We will add more products that can meet the criteria until a national specification can be established by a credible organization like ENERGY STAR® or the Consortium for Energy Efficiency. We have limited capability to do finite analysis outside of a more rigorous pilot.

Scot Davidson: You had a 2 percent response rate on the first pilot, but interest in smart thermostats is high. What is the barrier we haven't seen? Was self-installation a barrier?
Dan: Pilot participants were required to have a Wi-Fi network and an Android or Apple device, which screened out potential participants. Self-installation wasn't a significant barrier, at least for those who opted in.

Scot Davidson: How many smart thermostats are in your territory?
Marshall: Roughly 18,000-20,000. Mostly came from retail or online purchases.

Charlie: On the Lyric, it seems that the savings were negated.
Alan: I loved the Lyric thermostat and I saved 20 percent during the pilot. I can see how you save energy, but not how you can end up using more.
Charlie: Did the evaluators give some rationale?
Dan: There are some theories. We saw only 50 percent of people set up geofencing, and participants said it was more difficult to schedule geofencing in Lyric thermostats. The setbacks may have been less aggressive than their previous programmable thermostat.

Don Jones: If you provided incentives for the full incremental cost of the thermostats, would the measure pass cost-effectiveness tests?
Marshall: It wouldn't on the gas side.

Dan: Many smart thermostats have Wi-Fi connectivity, but most of these products haven't been shown to save any energy. A smart thermostat that has not been proven to save energy costs around $150. Nest thermostats cost $250 and have been proven to save energy.

Don Jones: You're getting incremental savings based on billing analysis?
Fred Gordon: Incremental savings are the full savings in this case. Studies show standard programmable thermostats and some smart thermostats do nothing or increase energy use. The baseline puts them on the same level.

Warren: Will smart thermostat prices drop based on competition?
Marshall: Nest is a niche product and there will be niche followers.
Dan: Nest has adopted a similar marketing stance to Apple by discounting older models.

Scot Davidson: The market share of Nest thermsotats isn't as large as you think. Nest and Google enjoy market visibility today, but that will change.
Dan: We are open to other products with proven savings.
Scot Davidson: Northwest Energy Efficiency Partnerships is writing a list of qualified products.

Garrett: The challenges are similar because there are a lot of manufacturers who are relatively new. PGE decided on Nest for the time being, but there are likely to be more options in the future. It's been a good partnership.

Don MacOdrum: SB 1547 included something about going after residential demand response. If I'm thinking about getting a smart thermostat, should I be thinking about participating in one of these pilots?
Garrett: Yes. There is a pilot with PGE.

7. New Buildings regional trainings and education

Jessica Iplikci, New Buildings program manager, presented on a training and education for Energy Trust's New Buildings program.

Jessica: Training and education efforts are an important tool for New Buildings to save energy and influence the direction of the building industry. Our four-part strategy includes training and education events, outreach and support, marketing and community building. Efforts will include building partnerships and supporting customers in all areas of the state.

Don Jones: This looks good. You seem to be reaching the right people and maintaining engagement with the building boom, including outside of Portland.

JP: Can you comment on trends in overall building efficiency? Are buildings getting more and more efficient?
Jessica: There are many aspects to consider. We have quite a few projects, maybe 30 or 35, that came to us as we launched our Path to Net Zero offering. We think we can learn the best practices over time, but we will need to work with many projects in order to do that. We hope to get enough practice to develop more training and education so even better projects come in. In addition, projects have very compressed timelines and adding efficiency elements takes time.

Don Jones: Are you seeing increased uptake on non-lighting offerings?
Jessica: Net-zero applications are different because you're looking at decoupling heating, ventilation and cooling in order to expand savings approaches. Savings come from designing better systems overall. Part of the result here is that there is a lot of engagement with net-zero energy efficiency and we are seeing acceptance by a broad group. With enough projects, we can begin to examine emerging design best practices and use the information more broadly or encourage more frequent application. We want to go from engagement to action and acceptance. Some market actors seem to be more confident on how they can apply early learnings to buildings, but there's a lot of variability in each building.

8. Public comment
There were no additional public comments.

9. Meeting adjournment
The next scheduled meeting of the Conservation Advisory Council will be on May 11, 2016, from 1:30 p.m. – 4:30 p.m.