

Conservation Advisory Council Meeting Notes



February 4, 2015

Attending from the council:

Jim Abrahamson, Cascade Natural Gas
Brent Barclay, Bonneville Power
Administration
Wendy Gerlitz, NW Energy Coalition
Garret Harris, Portland General Electric
Scott Inman, Oregon Remodelers
Association
Andria Jacob, City of Portland
Don Jones, Jr., Pacific Power
Jason Klotz, Oregon Public Utility
Commission
Don MacOdrum, HP Guild
Holly Meyer, NW Natural
Stan Price, Northwest Energy Efficiency
Council
Blake Shelide, Oregon Department of
Energy

Attending from Energy Trust:

Tom Beverly
Sarah Castor
Amber Cole
Kim Crossman
Sue Fletcher

Fred Gordon
Hannah Hacker
Debbie Menashe
Jessica Rose
Dan Rubado
Jay Ward
Peter West

Others attending:

Audrey Burkhardt, NW Natural
Christina Cabrales, CSG
Bill Edmonds, NW Natural
Sara Fredrickson, CLEAResult
Cameron Gallagher, Nexant
Mark Kendall, Energy Trust board
Alan Meyer, Energy Trust board
Tim Miller, Clean Energy Works
Nick O'Neil, Energy 350
Tom Phillips, Honeywell
Chris Smith, Energy 350
Marty Stipe, Oregon Department of Energy
Barbara Summers, NW Natural
Becky Walker, 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.

2. 2015 Conservation Advisory Council operating principles (discussion)

Kim called for feedback and comments about Conservation Advisory Council operations in 2015.

Don Jones: How have our operations worked for other users of the information provided at Conservation Advisory Council meetings? We've memorialized our rules and they have worked.
Kim: Staff appreciate the good discussion here.

Peter West: Our 2015 action plans included a number of things that came out of the discussions here. At the staff and management level, these are good rules of engagement. The same is true for Renewable Energy Advisory Council.

Alan Meyer: I thought the Strategic Plan discussion was helpful. Being here and seeing the interaction was good.

Mark Kendall: We are still formalizing and making things more overt. At what level do conversations here rise to the board? We took this on a couple of years ago, and articulated and clarified it here. It's beholden on board members who attend Conservation Advisory Council meetings to be a touchstone for other board members. There are issues that seem urgent here but end up as just a bullet in the board packet. The call for more board participation was important and good. Now let's operationalize it in a meaningful way.

Holly Meyer: Item number two says: draft a schedule and set expectations for the year. We haven't really looked at that for 2015.

Kim: You'll see that at the next meeting.

Holly: It makes a lot of sense to have board members here because it creates a better connection to the board. Also, new Conservation Advisory Council members are here, and we want to make sure they have a mentor or some orientation.

Kim: We will take a lesson from the Renewable Energy Advisory Council and do more onboarding work with new members.

[Holly Meyer and Don Jones indicated an interest in being a touch-point for new members.]

CAC adopted operating principles for the year.

3. Residential sector staffing changes

Peter West: We've had a great deal of turnover in the residential sector. Thad Roth is temporarily replacing Diane Ferington as residential sector lead. Betsy is running the renewable sector in the interim. A search is underway for a new residential sector lead.

Mark Wyman replaces Matt Braman as New Homes and Products program manager. Taylor Bixby works with Mark Wyman on the products side. Marshall Johnson is still in his role as Existing Homes program manager. Christian Conkle has moved to the forms manager position in the Communications and Customer Service group.

Kate Scott is the temporary program manager for multifamily. Scott Swearingen is working with IT on our data processing replacement project. Andrew Shepard is the new manager of the efforts for NW Natural in Washington.

4. Preliminary 2014 annual results (information)

Peter presented preliminary savings results from 2014. These are preliminary numbers. Official annual results will be available in our Annual Report in April. The slides show net savings.

Scott Inman: How does Energy Trust track purchases for residential light bulbs at stores like The Home Depot?

Peter: When the retailer scans a bulb, it charges Energy Trust for any qualifying incentive. We work with Bonneville Power Administration in dual-utility areas using algorithms that Northwest Energy Efficiency Alliance helped us develop to parse out sales in overlapping utility territories.

Mark: How closely aligned are 2014 Energy Trust goals to utility Integrated Resource Plan targets?

Peter: For 2014, we had a timing issue with both PGE and Pacific Power, so Energy Trust goals are slightly off from IRP targets. If Energy Trust's goal setting process occurs after utilities have set their IRP targets and we can identify more potential savings, the process allows us to set higher Energy Trust goals.

Mark: We align ourselves with IRP now, correct?

Don Jones: For Pacific Power, Energy Trust is aligned one year and off the next. It alternates every other year.

Holly: It was interesting to compare results for the industrial and residential sectors. They're close to each other on the electric side, but residential saved twice as much on the gas side. It's interesting for us to see this as measures change following the gas cost-effectiveness docket.

Kim Crossman: The industrial sector's gas efficiency efforts are less mature than the residential sector's gas efficiency efforts. We have been serving industrial customers for only five years, and a lot of businesses are on transport gas and therefore not eligible for Energy Trust incentives. You also see NEEA savings on the electric side, which have a big impact.

Don Jones: Did the financials land commensurate with the savings?

Peter: We were right on target for what we forecasted in September. We underspent our official budget, as predicted. The financials are closing now and we will have the full answer to that question with official annual results in April.

5. Path to Net Zero (information)

Jessica Rose presented information about the Path to Net Zero pilot and initiative. CLEAResult, formerly PECL, delivered the Path to Net Zero offering in the New Buildings program. Becky Walker helped build this from a pilot to what we have today. There is public information on the New Buildings Institute website about the 200 buildings nationwide that are net zero.

Mark: Were most of the early adopters owner occupied?

Jessica: When we started, the majority of participating projects could be placed in that category, but it's changing. As more tenants get involved, non-owner-occupied projects will become a bigger piece of the pie.

Don Jones: This is 2012 code?

Jessica: This is 2014 code.

Wendy Gerlitz: Can you give us a sense of how many buildings in Oregon would participate each year?

Jessica: Around 5 percent for our territory.

Becky Walker: The number always comes out in square footage. We enrolled 500 projects in our program. There are maybe 1,000 projects across Oregon.

Wendy: Where is the starting point? You did nine pilots, but what is the goal by 2030 in number of projects? I'm interested in the scale.

Jessica: Going 30 percent beyond code is possible in our custom program. Path to Net Zero projects go another 10 percent beyond that, putting the starting point at 40 percent beyond code. It's hard to know how many projects will achieve net zero by 2030, and we'll measure on a quarterly and annual basis. It will be a portion of the approximately 500 buildings we enroll in a given year. If 40 percent beyond code is the starting point, we want at least 10 projects per year to go beyond that. We may manage up to 30 Path to Net Zero buildings at a time, which are at various stages of design and construction and also achieving different targets.

Don Jones: You intervene at about 50 percent of the way through the construction documents, CD, process. It seems that you intervene with the customer twice during the value engineering process. Pacific Power sometimes intervenes twice during the CD process: once at 50 percent of the way through the CD process and again at about 80 percent of the way through the process.

Jessica: We intervene at about 50 percent of the way through the CD process and come back after that point to examine installation and commissioning. We have installation incentives we can provide.

Mark: Is commissioning design review having someone come in and review during the design phase, or is it waiting until the project is built?

Jessica: Ideally, we will be part of the design team, but it's during design review. Early is best.

Don Jones: Those savings incentives are regardless of cost, right? You end up with a negative incremental cost otherwise?

Jessica: We don't pay more than 100 percent of incremental costs and have a cap of \$500,000. Negative incremental costs aren't typically paid. The idea is that the benefit is already there and should be captured in the design process. Overall, we don't want the program to be a barrier.

Garrett Harris: What are the levelized costs and how do they compare with standard New Buildings costs?

Jessica: Path to Net Zero is a little more costly just looking at the potential installation incentives. Some buildings may not tap the installation incentives, and that's not a requirement to participate. It will vary by building and customer. Some projects could cost a little more, but they are getting deeper savings to balance it out.

Holly: Was the Edith Green building in the pilot?

Jessica: Yes.

Mark: What was the big surprise learned from the pilot?

Jessica: It's always surprising there isn't more early engagement occurring in the industry when a project is kicked off. Projects move rapidly, and taking the full day with us in early design is a big step beyond a typical charrette, where a developer sees who is on the design team for the first time. We help the design team focus on key strategies and priorities in the early design meeting, after the project charrette. The design team is often worried because of accelerated timelines.

Don Jones: Is an owner's representative required at the charrette?

Jessica: Yes. This is a good opportunity for program staff to connect directly with the owner or owner representative.

Mark: What engagement has the state building codes division shown in this pilot with their cycle of code development?

Jessica: We engage with Oregon Department of Energy. They are well aware of the program. There is potential for tax credits to help. The second piece is bringing up the bottom of the market. That happens through NEEA because NEEA addresses codes as part of their commercial markets strategy.

Mark: With the advent of LEDs, getting 20 percent better than code is easily attainable. Is there an initiative to move the baseline as part of our strategy?

Jessica: Codes in Oregon are on a six-year cycle. There are things we can do with incentive design to adjust the program baseline.

Wendy: Are there other entities offering anything around net zero, nationally?

Jessica: There are others all over the map: ComEd in Chicago, Savings By Design in California, Vermont and others.

Andria Jacob: The city's coming action plan supports net zero, and we can talk more offline. What support would be helpful from a jurisdictional standpoint?

Jessica: Yes, there's a lot of jurisdictional creativity that can happen in this space. We can talk offline.

Blake Shelide: The Oregon Department of Energy offers tax credits that could help align and advance Reach Code. There is some work with Warren Cook. How is net zero being defined? How is a site being looked at versus a source?

Jessica: We look at site usage.

6. NEST Thermostat Evaluation (information)

Dan Rubado presented results of Energy Trust's Nest thermostat evaluation, which indicated that Nest is a viable technology to achieve energy savings in homes with electric heat pumps.

Mark: Is Nest an acronym?

Dan: It's the company name: Nest Labs, which is now owned by Google.

Mark: So Nest's capabilities are not in the thermostat? They have to source those from the Internet?

Dan: The logic is inside the thermostat, but it has to receive weather data and remote control capabilities from online. It also updates its operating system from time to time.

Mark: Did we correlate savings with people making changes to the thermostat settings?

Dan: We did, but the numbers were small and we may not be able to tell much.

Don Jones: There's a single motion detector in the unit?

Dan: Yes. You would have to pass the thermostat during a two-hour period to avoid occupancy sensor changes. It's tuned so it doesn't pick up pets.

Holly: What's the best selling point about the Nest?

Dan: Customers like the scheduling automation and being able to control it remotely with a smart phone.

Don MacOdrum: Does it track energy use?

Dan: It tracks time that a furnace is running, and will tell you if you're making changes that cause the furnace to run.

Mark: Is there any anticipation of cooling load savings?

Dan: Nest claims 15 percent from recently published studies, but actual cooling savings would probably be small in Oregon since cooling loads tend to be small here.

Brent Barclay: What did they claim on the heating side?

Dan: In a recent white paper, Nest claimed 10 to 12 percent savings, which is what we saw.

Mark: What portion of that savings is attributable to the different features?

Dan: It's hard to tell. We weren't able to separate out savings from different features, and the number of households that disabled key features was too small to compare to the rest of the sample. However, we suspect that the heat pump balance point feature is responsible for a lot of the savings we saw.

Jim Abrahamson: Was the baseline the home's actual metered use?

Dan: Yes.

Holly: You offered a free Nest, and the people who took the offer may have a propensity toward energy savings. It could be a skewed sample.

Dan: The people who would go out and buy it in the market would also be a skewed sample. We did have a pretty low follow through rate on the offer. We sent it out to about 1,600 people and only ended up with 174 successful installations.

Wendy: Did the survey pick apart backup heating savings from savings through voluntary efforts?

Dan: Yes, we did ask about how people used the thermostat and what features they used in the surveys. We tried to look at differences in savings by what features they used, like auto-away and controlling the thermostat from their smart phone. Unfortunately, the number of homes in each group was too small to tell.

Don Jones: Was there any overlap with Home Energy Reports?

Dan: We screened out homes receiving Home Energy Reports or any other Energy Trust measures from our analysis.

Alan: I am participating in the Lyric pilot. I saved a lot while I was away on vacation. I could monitor savings while I was away and turn the heat back up before I came home. Even if you don't do anything, a smart thermostat will save energy.

Mark: What kind of data do we know about the control group?

Dan: We assume they were similar to the test group. Control group participants were chosen from the same group of homes with the same selection criteria.

7. Greenhouse gas emissions reduction at Northwest Natural (information)

SB 844 passed during the 2013 legislative session and allows natural gas utilities to develop voluntary projects to reduce greenhouse gas, GHG, emissions. Kim introduced guest speakers Bill Edmonds and Barbara Summers of NW Natural to describe how this new law works and present some of the early emission reduction projects under development. NW Natural projects to reduce GHG emissions could include methane abatement programs and a market solicitation for combined heat and power, CHP, projects.

Mark: Does the CHP MW capacity include those on transport gas?

Barbara Summers: It does, and I'm indifferent to whether it's transport. Energy Trust would pay for efficiency and the Oregon Department of Energy would look at upfront capital investment. We have the same eligibility criteria and evaluation and verification processes. We would have to verify and measure over the entire period we pay SB 844 incentives.

Don Jones: This assumes that none of these come in under a qualifying facility, QF, and no Public Utility Regulatory Policy Act contracts.

Barbara: I haven't addressed that at all.

Kim: On our side, most QFs aren't going to be efficient enough to receive SB 844 incentives.

Barbara Summers: If a system isn't utilizing the waste heat, we probably aren't going to support it because it won't be efficient enough.

Don Jones: It seems like that would be perfect to get them to QF status.

Barbara: I haven't looked at it, but it's on my list.

Mark: This is an innovative program. Are others around the country engaging their commissions?

Bill Edmonds: This new law allows this kind of thinking and opens things up. Washington is also thinking about it. The Oregon law was a commissioner's idea to begin with.

Mark: There is a long lead time and background work in ramping up these new programs. Is that allowable under the 4 percent rate recovery?

Barbara: We asked that of the commission, and we can incur this as a utility cost.

Don MacOdrum: What about oil conversion?

Bill: There's not much more than what I covered. There is a team working on it, and the barriers are gas availability, low-income homeowners and renters. Low oil prices aren't helping either. How do you overcome those barriers? On-bill financing is one strategy.

Kim: Where can people learn more?

Bill: They can send me an email. Public process will be more formal at the OPUC. Jason Eisdorfer will likely oversee that process.

Kim: This is something very unusual and innovative, and something for Oregon to be proud of.

8. Support for natural gas-fired Combined Heat and Power systems (discussion)

Kim presented an overview of program and technical guidelines for high-efficiency CHP projects, including a proposed incentive change.

Don Jones: When we say CHP needs to beat the heat rate of a new turbine, that's new as of when?

Kim: That's 2006. This isn't the baseline for calculating savings, just the hurdle it needs to pass. We didn't see an immediate need to update the heat rate at this time.

Don: I'll take these slides back to my organization for review.

Kim: This heat rate was agreed on by the utilities and the Conservation Advisory Council. When we do update the heat rate, that effort will be in Energy Trust's Planning department. The CHP also has to be cost-effective, like all custom projects. Some micro-turbines and fuel cells won't meet our cost-effectiveness tests.

Holly: Are you allowed to count non-energy benefits to CHP systems?

Kim: Yes, and that's the beauty of the custom process. There are often quantifiable non-energy benefits to CHP projects. People are also trying to solve other problems.

Wendy: How does the proposed incentive level relate to cost-effectiveness?

Kim: The costs remain the same wherever we set the incentive.

Wendy: What's the threshold you wouldn't want to go beyond paying?

Kim: We have program-level cost-effectiveness requirements from the OPUC. Let's say 4 cents/kWh levelized. With CHP at the same incentives as other custom projects, 25 cents/kWh, and with a 15-year measure life, savings are less than 2 cents/kWh levelized. All

of the programmatic costs get layered on top of that. We would still be well under where we want to be on our levelized costs.

Chris Smith: It's a measure of the amount of extra fuel needed to generate electricity versus what you would use for heat anyway. It's an apples-to-apples comparison.

Don Jones: Is this technical guideline new or a revision of something you had?

Kim: It's new, but it's documentation of what we already have been doing. Chris Smith and Nick O'Neil had a huge hand in creating this documentation.

Mark: This is industry standard arithmetic, correct?

Kim: This is industry standard.

Don Jones: How does this relate to the IRPs?

Fred: It's not in the supply curves. There's a little increment the board put into the strategic plan for other things that might happen. We used it to slightly hedge up our goals.

Garrett: How does this work with SB 844?

Kim: The point of this chart is that there are stacked incentives. We don't know what the NW Natural share is. Oregon Department of Energy is fairly clear on what portion of project costs we are supporting.

Fred: These are capital costs, not fuel costs.

Chris: NW Natural's payment is annual, by the way.

Mark: That's Investment Tax Credit. Does it include accelerated depreciation?

Chris: No. It's simpler than that.

Kim: We are also looking at much more complex models, but we don't have a lot of flexibility. We wouldn't pay more than we pay for other custom incentives. Our cap is at 25 cents. Our incentives are not an insignificant part of project costs.

Holly: When you say current, you mean with the NW Natural SB 844 work?

Kim: The economics weren't there previously. even with new SB 844 incentives, these projects aren't slam dunks.

Peter: Based on my renewable energy experience, the Investment Tax Credit and accelerated depreciation would drive you to a stop near the hurdle rate. You still need someone with a tax liability to do this.

Kim: Will it actually fly even with higher incentives? We don't know.

Don Jones: I will reiterate my QF comment. There's a QF incentive in there, too. Would you pay all of this?

Alan Meyer: With avoided costs, is there a QF incentive? I don't believe so.

Holly: I'm thinking of the bottle bill. When it was instituted, 5 cents was worth what 25 cents would be today. I'm glad you are looking at higher incentives.

Brent: If you had a straight heat recovery-to-electric conversion with no net gas consumption, would it go through this program?

Kim: If it's heat recovery, it goes through as gas efficiency. This is all about policy stuff.

[The CAC was tentatively supportive of an incentive increase when polled.]

Don Jones: At this point, Pacific Power will abstain until we consult with some internal folks.

Kim: We can talk. We have at least a month before we roll anything out.

Kim: Generally, incentive increases are vetted here, but final designs are done inside the programs. CHP is odd, so I wanted Conservation Advisory Council members to see it. We know we have to increase incentives. The question is where we set the level.

Jim: What would be the dollar impact on Energy Trust of doubling the incentives for CHP?

Kim: At worst case we are coming in under 2 cents/kWh and under the OPUC threshold.

Wendy: I wonder if you'll be quickly bumping against the cap if a couple of large projects come in?

Kim: That could happen. Larger sites are best for CHP. We hope for CHP systems on the smaller end.

Mark: This wouldn't come to the February board meeting, so we can discuss it here next time, correct?

Kim: I believe this does go to the board in February. I'm hearing that the other incentives will be ready in June or July. We do have three customers considering CHP who are curious about what our incentives will be.

9. Meeting adjournment

The meeting adjourned at 5:00 p.m. The next Conservation Advisory Council meeting is scheduled on March 11, 2015.