

Agenda

Conservation Advisory Council

Friday, November 17, 2017 1:30 p.m. – 4:45 p.m.

421 SW Oak St., #300, Portland, OR 97204

1:30 Welcome, old business and short takes

Introductions, agenda review, October 2017 CAC minutes Follow-ups from October meeting

1:45 Measure updates

Staff will provide an update on the OPUC order on measure cost-effectiveness exceptions submitted by Energy Trust.

1:55 Pilots update

Staff will provide an overview of in-progress pilots at Energy Trust, presenting specifically on commercial Pay for Performance and a manufactured homes replacement pilot.

2:40 Residential sector staffing structure changes

Staff will present a revised staffing structure supporting the 2018 Residential program, which will launch in 2018 with a structure that has been consolidated from three programs to a single program.

3:00 Break

3:15 Changes to draft 2018 budget (discussion) Staff will review major changes being made to the draft budget before it is presented as a final proposed budget for the board of director's vote and adoption in December. A review of public comments received will be provided, if available in time.

4:15 Update on diversity, equity and inclusion strategy (discussion) Staff will provide a brief update on Energy Trust's Diversity, Equity and Inclusion strategy and activities.

4:30 Public comment

4:45 Adjourn

The next scheduled meeting of the Conservation Advisory Council is Wednesday, February 7, 2018

(discussion)

(discussion)

(information)

(information)



Conservation Advisory Council Meeting Notes

October 25, 2017

Attending from the council:

JP Batmale, Oregon Public Utility Commission Holly Braun, NW Natural Warren Cook, Oregon Department of Energy Kari Greer, Pacific Power (for Don Jones) Garrett Harris, Portland General Electric Andria Jacob, City of Portland

Attending from Energy Trust:

Susan Badger-Jones Mike Bailey Gwen Barrow Amber Cole Mike Colgrove Hannah Cruz Lindsey Diercksen Sue Fletcher Fred Gordon Susan Jamison Susan Jowaiszas Oliver Kesting Steve Lacey

Others attending:

Mark Bassett, OPUC Stephanie Berkland, TRC Lindsey Hardy, Energy Trust board (by phone) Rick Hodges, NW Natural Brian Loghran, Evergreen Lisa McGarity, Avista Jeff Mitchell, Northwest Energy Efficiency Alliance (for Julia Harper) Carrie Nelson, Bonneville Power Administration (for Brent Barclay) Stan Price, Northwest Energy Efficiency Council Allison Spector, Cascade Natural Gas

Scott Leonard Spencer Moersfelder Alex Novie Amanda Potter Thad Roth Kate Scott Zach Sippel Cameron Starr Julianne Thacher John Volkman Jay Ward Peter West Mark Wyman

Lise Luchsinger, Home Performance Guild Joe Marcott, LME Alan Meyer, Energy Trust board Lonney Peet, Nextant Shannon Todd, TRC Jeffrey Tambarro, NW Natural

1. Welcome, Old Business and Short Takes

Hannah Cruz convened the meeting at 1:30 p.m. The agenda, notes and presentation materials are available on Energy Trust's website at <u>www.energytrust.org/about/public-meetings/conservation-advisory-council-meetings/.</u>

Hannah provided a draft schedule for 2018 Conservation Advisory Council meetings. The schedule will be posted online.

For Energy Trust's 2018 Budget and 2018-2019 Budget and Action Plans, the public comment period is November 1 – 17, 2017.

Hannah provided an update on the Secretary of State's performance audit of Energy Trust. The auditors completed preliminary interviews of Energy Trust, the Oregon Public Utility Commission and stakeholders, and they did not identify any areas of risk or concern. The audit will move forward with a focus on Energy Trust's administrative costs.

2. Draft 2018 Budget

Peter West presented Energy Trust's draft 2018 annual budget. In 2017, Energy Trust expects to exceed energy savings for three utilities. A large megaproject will bolster savings in PGE territory. Shortfalls for two gas utilities are expected due to project delays and a strategy to delay savings per NW Natural's request. Energy Trust also expects to exceed its renewable energy generation goal, with strong standard solar demand and completion of two large-scale solar projects. NEEA is expected to exceed its 2017 Energy Trust goal.

Peter noted that action plans for programs and support groups will be included in the draft budget materials available on November 1, 2017. Feedback is requested by November 17, 2017.

Annual budgets are tied to Energy Trust's five-year strategic plan goals. Energy Trust is on track to achieve 74 percent of Strategic Plan electric savings goal, 81 percent of Strategic Plan gas savings goal and to exceed the Strategic Plan renewable generation goal by the end of 2017.

Peter described the 2018 market and context that impacts Energy Trust's budget. A stable economy will drive high activity in some program areas. Oregon's population is diversifying, and interest from stakeholder groups representing diverse communities is growing. Staff expect changing policies, markets and technologies, including the expiration of the state Residential Energy Tax Credit at the end of 2017. Fewer savings per project are expected as Energy Trust serves customers more deeply and acquires harder-to-reach savings. Avoided costs are shifting and cost-effectiveness challenges are anticipated.

Peter described three major areas of emphasis in the draft 2018 budget. They all support the core goal of benefiting customers and ratepayers by achieving energy goals and operating effectiveness. The focus areas are to diversify participation, manage change and prepare for the future, and enhance program methods and strategies.

Examples of efforts to diversify participation include increasing outreach to small- to medium-sized businesses and agricultural customers; identifying strategies to increase access to solar in low-income communities; pursuing contracts with community-based organizations to reach underserved communities; and applying a diversity, equity and inclusion lens to operations and programs.

Examples of efforts to enhance program methods and strategies include using new and improved data resources for analysis and targeted marketing, leveraging energy-related initiatives spearheaded by others, fostering long-term relationships with business customers and supporting long-term project planning for communities, and focusing outreach to irrigation hydropower and biogas projects.

Examples of work to manage change and prepare for the future include supporting targeted demand-side management efforts with utilities, collaborating with NEEA to identify new measures and strategies, implementing transitional strategies for solar and lighting, and implementing recommendations from internal Organizational Review and Budget Review projects.

All activities planned for the year are described in the action plans that will be available November 1. CAC saw the draft versions of these in September.

JP Batmale: How do you plan to track and report on efforts to diversify participation? Peter West: We are still figuring out the best ways to do this. We regularly seek customer feedback through Fast Feedback surveys. There are other ways to collect information, whether on forms or through surveying customers. We will determine what methods provide the most accurate responses.

Lisa McGarity: What is the starting point for working with community-based organizations to reach underserved communities?

Peter West: We will seek input from these organizations in developing and designing offerings for low-income customers.

Lisa McGarity: Will you start with a specific community, like the Latino community, or will you focus on all communities?

Michael Colgrove: One of our first steps will be to identify underserved customer groups to determine where Energy Trust should target efforts. We are now starting outreach to multicultural organizations that work across communities.

Peter continued his presentation. In 2018, Energy Trust proposes to invest \$199.6 million to save 56.52 average megawatts and 6.88 million annual therms. Electric savings will increase by 0.2 percent and gas savings will decrease by 7.2 percent. The decrease in gas savings is due to Energy Trust's agreement with NW Natural to level out acquisition of NW Natural DSM and updated data indicating we have more free riders than expected. We will save this energy at a levelized cost of 3.0 cents/kWh and 33.5 cents/therm.

Energy Trust will generate 2.18 aMW of renewable energy. This is a 24 percent reduction from 2017, largely due to expiration of the Residential Energy Tax Credit, the sector is working within flat annual revenues and having spent down carryover funds from prior years, and timing of other hydropower and biogas projects.

Holly Braun: For NW Natural demand-side management, Energy Trust expects to save more in 2018 than in 2017?

Peter West: The slide you are looking at is comparing budgeted goals for both years, not actual savings.

Peter: In the 2018 draft budget, spending is up 0.5 percent due to increased project volume and an increase in internal costs. However, revenue is down slightly from 2017. Energy Trust expects to acquire savings at a lower cost than planned in 2017, and staff will use the additional reserves to meet 2018 spending needs in excess of anticipated revenues. Administrative costs remain low.

The majority of 2018 draft budget expenditures are for efficiency and renewable energy programs. A minority of funds are for management, operations, communications and outreach. Of the program spending, 58 percent is for incentives, 11 percent is for internal program delivery and 31 percent is for external program delivery.

JP Batmale: What's the difference between internal and external program delivery costs? Where does Strategic Energy Management fall?

Peter West: External deliver is from the PMCs and the PDCs. Internal delivery are the costs for program delivery and support managed directly by Energy Trust staff. SEM program delivery is largely external, with a small number of staff members to manage contractors.

JP Batmale: I like the breakout of expenditures by program delivery and incentives. Holly Braun: Washington Utilities and Transportation Commission is interested in this breakout, but they also look at the operations costs. Washington Utilities and Transportation Commission wants to see a ratio of incentives compared to all costs, including operations and marketing.

Peter: The budget for renewable energy programs will drop by about 25 percent in 2018. The Solar program will be challenged to support the market after RETC expires.

Andria Jacob: If RETC goes away and above-market costs go up, wouldn't we increase spending on renewable energy incentives?

Peter West: Yes, there will be some incentive increases in 2018 for solar projects. But not enough to fully compensate for the loss of the RETC. We do not have enough funding to fully offset RETC. We also need to let the market settle out before we make other major incentive changes. In this budget we also expect to pay incentives in Q1 of 2018 for projects that completed in Q4 2017 and still benefit from RETC.

Hannah Cruz: In addition, we are limited in the annual revenues Energy Trust receives for renewable energy programs.

Peter: Nearly one-half of natural gas savings in 2018 is expected to come from residential programs, with 26 percent from Existing Buildings, 14 percent from New Buildings and 15 percent from Production Efficiency. Production Efficiency is expected to provide roughly one-third of electric savings, followed by Existing Buildings at 29 percent, residential at 13 percent, NEEA at 13 percent and New Buildings at 11 percent.

Peter reminded the group that the three current residential programs—Existing Homes, New Homes and Products—will be consolidated into one program in 2018. Electric savings from the residential sector will be much smaller than in 2017, largely due to market transformation for LEDs. Energy Trust will incent about 1 million fewer bulbs in 2018 than in 2017, and will claim fewer savings per bulb due to increasing regional and federal baselines. Peter noted that lighting savings are also the cheapest savings with the lowest delivery and staffing costs. Residential gas savings will be primarily from EPS new home construction, followed by 29 percent of savings from home retrofits, 8 percent from retailers and distribution, and 0.01 percent from manufactured homes.

Kari Greer: Is support for manufactured homes an electric option? Peter West: Yes.

Holly Braun: Is this a big shift of savings from home retrofit to new construction? Hannah Cruz: The residential programs have been combined, so you haven't seen savings shown this way in prior years.

Thad Roth: The budget also reflects an expected decrease in showerheads.

Lisa McGarity: For low-income smart thermostats, how many low-income residents have Wi-Fi? Peter West: That will be part of our low-income customer research and exploration.

Allison Spector: Avista's residential budget is much lower than Cascade Natural Gas's, but Avista savings are roughly on par with Cascade Natural Gas. Why is that? Thad Roth: This could be market transformation savings related to new home construction. Livill

Thad Roth: This could be market transformation savings related to new home construction. I will check.

Allison Spector: Avista would like to integrate more market transformation.

Alan Meyer: Is it accurate that the 2018 residential goals are lower than 2017 goals? Peter West: Yes.

JP Batmale: Is NW Natural's residential goal up in 2018 over 2017? Peter West: Yes, slightly.

Peter showed a chart of LEDs as percent of regional market share from 2011 to 2017. LEDs went from 1 percent of the market in 2011 to 58 percent of the market in 2017. Halogen bulbs have also increased market share from 1 percent in 2011 to 31 percent in 2017. The change reflects a significant decrease in sales of incandescents and CFLs. During this time period, LED prices dropped from more than \$18 per bulb in 2011 to less than \$4 in 2017.

Peter described the shift of savings and incentives allocation for new homes from electric to gas. This impacts homes that are served by both electric and gas utilities by changing the proportion of incentives and savings allocated for each utility. The change is due to lower avoided costs for electric, a 6 percent increase in the electric code that reduces the amount of available savings and ten compounded by the much greater number of homes being built are gas-heated.

Holly Braun: You said there's more relative value for gas savings, but can you help us understand absolute value?

Peter West: Remember that we expect 18 percent more new homes built in 2018 than compared to the 2017 budget. I can follow up with you to provide this information.

Allison Spector: Is the split in dual-fuel homes between space and water heating? Peter West: That is one source, but there are many combinations of gas and electric equipment that could be in a home. Dual-fuel homes do not include homes with only electric space and water heating. We will circle back with a better breakdown of how costs are being re-allocated.

Mark Wyman: The split between electric and gas represents the composition of available savings achieved by building above what is required by code. The new code reduces the opportunity for electric savings in homes that do not have electric space heat, and the new requirement for 100 percent efficient lighting in new homes. So there will only be electric new home savings from space heating, water heating, and shell measures, but not lighting.

Peter: Commercial sector electric savings are about two-thirds from Existing Buildings, 27 percent from New Buildings and 8 percent from Existing Multifamily. Growth is expected from Pay for Performance and commercial SEM. Staff expects more projects and smaller projects to complete in 2018. This is also true for the industrial sector. Industrial sector savings will increase in 2018. Custom savings are expected to make up 31 percent of 2018 Production Efficiency savings, with 26 percent from a megaproject, 23 percent from lighting, 11 percent from industrial SEM and 8 percent from standard upgrades.

Jeff Mitchell, NEEA residential and mass markets senior manager, described NEEA's plans for 2018. There are no large changes expected. On the natural gas side, NEEA will work to bring a more efficient gas clothes dryer and a more efficient gas water heater to market. On the electric side, NEEA will launch two new initiatives: extended motor products and dedicated outside area. Both of these initiatives would save both gas and electricity. Reducing ductless heat pump costs will also be a priority. NEEA will also pursue an efficient clothes washer initiative. A residential building stock assessment will complete and a commercial building stock assessment will launch in 2018.

Alan Meyer: Why is Portland General Electric's goal for NEEA going up and Pacific Power's goal going down?

Spencer Moersfelder: Energy Trust allocates savings to utilities based on revenue from PGE and Pacific Power. We will follow up with more detail.

Garrett Harris: Does it have to do with the mix of measures offered in each territory? Fred Gordon: I don't think so. I will check.

Peter described customer benefits from Energy Trust's 2018 budget, and reviewed the budget outreach schedule and opportunities for input.

3. Net-to-gross Methodology

Spencer Moersfelder and Fred Gordon described how net and gross savings are calculated for tracking, budgeting and reporting purposes.

Working savings are the best estimate of savings realized at a participating site. Working savings do not include savings from transmission and distribution. Working savings includes different baselines and free ridership assumptions based on measure types. For prescriptive measures, Energy Trust uses market baselines or existing conditions. For custom projects, working savings do not account for free ridership and do not include a technical realization rate adjustment for impact evaluation findings. For market transformation, working savings are based on a shift in market share above a forecasted baseline.

Fred added that working savings are the savings Energy Trust starts with before applying economic principles. Working savings are the basic unit of savings.

Lisa McGarity: Is there an internal goal for realization rates? Fred Gordon: No. Our goal is to estimate savings as close to actual savings as possible. Alan Meyer: You start with working savings for both custom and prescription, but for prescriptive you apply learning from prior experience with prescriptive measures? Fred Gordon: Correct.

Spencer: Net or reportable savings are the primary savings included in budgets and reports. These include transmission and distribution savings, and savings reductions attributed to free riders. Net savings also include savings attributed to spillover and technical realization rates where possible. Spillover refers to customers that install an efficiency upgrade because of Energy Trust's influence, but they did not participate in Energy Trust's programs. Market transformation quantifies the market shift from baseline for an entire market. There is no realization rate for market transformation. Market transformation savings do include transmission and distribution savings.

Alan Meyer: We always include transmission and distribution savings? Fred Gordon: Yes, on the electric side. There's a different percentage for each sector.

Spencer: Gross savings are savings that utilities see at the generator from participating projects, regardless of free ridership. Free riders are added back into gross savings. We do this because utilities are interested in how much energy is needed to meet existing load after reductions from efficiency regardless of free-ridership. Gross savings do include adjustments based on impact evaluation findings. Energy Trust began reporting gross savings in budget documents and annual reports in 2016.

Because of changes in Savings Realization Adjustment Factors for 2018, Energy Trust needs to acquire more working savings in some programs, such as Existing Buildings program, in 2018 to claim the equivalent amount of net savings as in 2017.

Holly Braun: If Savings Realization Adjustment Factors comes down, how does that impact Integrated Resource Plan savings?

Fred Gordon: For utilities that use net savings for IRP, if your Savings Realization Adjustment Factor goes down, your net savings go down.

Holly Braun: So if Savings Realization Adjustment Factors go down, IRP goals go down accordingly?

Fred Gordon: The Integrated Resource Plan may have been set prior to the Savings Realization Adjustment Factor adjustment. This is one reason it's difficult to achieve IRP goals precisely. It depends on what you mean by the Integrated Resource Plan. There is a draft plan, then a final. Then there are annual updates to the efficiency forecast in the plan that Energy Trust develops with the utilities.

Warren Cook: What's the size of the difference between working savings and net savings? Fred Gordon: That may be confusing because it includes line losses. Peter West: We can provide that.

4. Residential Sector 2018 Incentive Changes

Scott Leonard, residential senior project manager, described residential year-end changes, including measures that were submitted for cost-effectiveness exceptions to the OPUC and are pending a decision. The OPUC is conducting a public input process, and will accept comments through Thursday, October 26, 2017. A decision will be made on November 7, 2017.

Factors influencing 2018 measures include updated avoided costs, RETC expiration, new codes and standards, expiring exceptions and changing market conditions. Measures pending OPUC

exceptions are gas new manufactured homes, a few EPS pathways in Oregon, gas tank water heaters and ductless heat pumps.

Allison Spector: Which exceptions are major and which are minor? Scott Leonard: Gas manufactured homes are minor. The rest are major.

Warren Cook: The issue with the ductless heat pump is the cost of the measure, not the savings, correct? Scott Leonard: Yes.

Holly Braun: What does major or minor mean?

Scott Leonard: The major/minor threshold is used by the OPUC to determine how measure exception requests are reviewed/approved. Minor exception requests can be approved by OPUC staff while major exception requests require commissioner approval. Several factors go into determining whether an exception request is minor versus major, such a Total Resource Cost Test (TRC). TRC below .5 are not usually considered for exceptions unless part of a pilot, TRC between .5 & .8 are usually major exceptions. OPUC also considers the percentage of savings the measure in request contributes to the program. Usually 5 percent is the threshold for minor versus major exception requests

Scott described additional year-end measure changes. Market rate gas furnace incentives were offered for Avista customers in 2017 as an extension from Avista's previous incentive, and the current incentive will remain through Q1 2018. Additional market analysis is being done in Eastern Oregon to determine if the incentive should continue beyond Q1 in that region of Avista's service territory. New construction individual equipment incentives will be incorporated into the EPS homes incentives. Energy Trust will still provide incentives for the equipment installed in new homes, but not as individual equipment installations. Due to new home construction code change and an increase in baseline, Energy Trust will change the incentives for EPS. This is likely to result in a 15-20 percent reduction in new home incentives. Energy Trust will also change heat pump and heat pump controls measures.

Holly Braun: If heat pumps are not cost-effective now at a 9.0 HSPF, why would you increase the incentive and incent a lower HSPF? Why are you blending the two tiers into one incentive? Scott Leonard: We expect fewer requests for incentives for higher tier units.

Holly Braun: You're getting less savings and you're paying more money.

Scott Leonard: The incentives are determined by the proportion of lower- and higher-tier heat pumps expected. The lower-tier units are more cost-effective, and we expect the majority to be lower tier units.

Holly Braun: I heard that 9.0 HSPF could not be incented anymore because it's common practice and that we could only incent 9.5. Now we are incenting 8.5. Are you going backward? Mark Wyman: There's a difference between replacing a resistance heat system and upgrading to a new heat pump. Upgrading from a heat pump to a more efficient heat pump is not cost-effective. If the heat pump is replacing resistant heat, it is cost-effective and an incentive offered.

Peter West: So we're consolidating offerings, ending ones that did not work and removed heat pump to heat pump conversations. These revised HP incentives are only for conversion from resistance electric heat.

Mark Wyman: Correct. Customers can still get an incentive for controls when replacing a heat pump with a heat pump. The incentive is for controls, not heat pumps.

Scott: Our aim is to simplify and consolidate incentives and to encourage replacement of electric resistance heat with efficient heat pumps.

5. Existing Multifamily 2018 Incentive Changes

Kate Scott, Existing Multifamily program manager, described Existing Multifamily incentive changes. There are three pending cost-effectiveness exception requests with the OPUC, including ductless heat pumps, gas tank water heaters in duplex, triplex, fourplex and side-by-side structures, and replacement of single-pane windows for electrically heated stacked structures with five or more units. Incentives for double-pane windows replacement will be discontinued.

Energy Trust will add incentives for heat pump advanced controls in duplex, triplex, fourplex and side-by-side structures to align with the residential sector. Existing Multifamily will also add incentives for rooftop unit controls. Existing Multifamily launched two new incentives in mid-2017, including smart thermostats and tankless water heaters less than 199 kBtu/h in stacked structures with five or more units.

Existing Multifamily will align ducted heat pump incentives and requirements with residential in 2018 for duplex, triplex, fourplex and side-by-side structures.

Alan Meyer: Do ducted heat pumps have to replace electric heat? Kate Scott: Yes, the current measure already requires replacing electric resistance heat. Previously they had to replace central air conditioning as well, but that requirement is going away in 2018. Currently the efficiency requirement is 9.0 or greater, but in 2018 it will be 8.5, the same as residential.

Kate: Existing Multifamily is changing incentives for gas furnaces in stacked structures from a flat incentive to an incentive based on the size of the system being installed. This is to better align incentives with savings.

Existing Multifamily will discontinue incentives for replacing double-pane windows in electrically heated structures with five or more units. Incentives will be discontinued January 1; however, the program will have a process for submitted installation deadline extensions for customers or contractors with projects currently planned which cannot install by the December 31 deadline. Extension requests must be submitted by December 31, 2017, and approved projects only will receive an extension through March 31, 2018.

Existing Multifamily will remove the \$150 cap and ceiling insulation requirement for gas wall and floor insulation in duplex, triplex, fourplex and side-by-side structures. This is to align with the requirements laid out in the OPUC cost-effectiveness exception for these measures, and reduce customer confusion.

There are new federal standards and market baselines that make electric tank water heaters no longer cost-effective, and incentives will be phased out in 2018. New labeling standards that went into effect this year also complicate determining which models qualify for incentives. The program will work with customers on this issue during a transition period, and incentives will be fully discontinued by mid-year.

There will be two minor clothes washer requirements changes. There will be a minimum capacity requirement for residential clothes washers and commercial clothes washers must be front loading.

6. Agriculture 2018 Incentive Changes

Lindsey Diercksen, senior industrial program manager, presented on changes to agriculture incentives. There are seven irrigation measures pending OPUC exception requests. For three of them, the OPUC staff recommends retiring the exception and therefore the Energy Trust incentive at the end of 2018. For the remaining four, the OPUC staff recommend approving the cost-effectiveness exception until the end of 2019.

Peter added that Energy Trust's budget assumes that the OPUC grants pending measure costeffectiveness exception requests.

7. Commercial Strategic Energy Management 2018 Incentive Changes

Kathleen Belkhayat, commercial SEM manager, shared incentive changes for commercial SEM. In 2017, Energy Trust increased commercial SEM incentives to align with Pay for Performance and

retrocommissioning incentives. In 2017, Energy Trust also added an incentive for companies to hire interns to support commercial SEM efforts. Staff learned customers are motivated by SEM support services more than incentives. In 2018, incentives will be reduced to align with industrial SEM incentives. The program will also include one additional incentive for milestone achievements.

8. Public Comment

Holly Braun: I want to understand exactly what kind of feedback Energy Trust wants from Conservation Advisory Council members about the budget. I already have a forum for feedback as a utility, but I don't understand what kind of feedback you need from me as a council member. I will discuss this with Hannah.

Peter responded that we want input on any parts. There is not a separate view we need. The important part is to get to hear what makes sense, what does not, what may need to be reconsidered and what may be missing.

There were no additional public comments.

9. Meeting Adjournment

The meeting adjourned at 4:45 p.m. The next scheduled meeting of the Conservation Advisory Council is Friday, November 17, 2017.



Status of Cost-effectiveness Exception Requests

Measures	Programs	Status	Timeframe of Exception
Ductless heat pumps	Residential, Existing Multifamily	Cost-effectiveness exception approved for existing homes and Multifamily; measure sunset for new homes	2018-2019
Gas tank water heaters	Residential, Existing Multifamily	Cost-effectiveness exception approved	2018-2020
New homes EPS, select tiers and fuels	Residential	Cost-effectiveness exception approved	2018 for Path 1; 2018-2019 for Paths 2 and 4
Manufactured homes, gas heated	Residential	Cost-effectiveness exception approved	2018-2020
Single-pane windows	Existing Multifamily	Cost-effectiveness exception approved	2018-2019
Sprinkler irrigation, select measures	Production Efficiency	Cost-effectiveness exception approved	2018 for 3 measures; 2018-2019 for 4 measures

Sprinkler Irrigation Measures

Timeframe of Exception	Measures	
Available for 2018Retire in 2019 after a one-year	New drop tube or hose extension for low pressure	
exception to sunset the measure	Rotating type low pressure sprinkler replacement	
	Impact sprinkler rebuild or replacement	
Available for 2018-2019Extend to 2020 in order to align	New goose necks	
with utilities in the region	Flow controlling nozzle impact sprinkler replacement	
	Multi-trajectory low pressure sprinkler replacement	
	Rotating type impact sprinkler replacement	



Thank You

Jackie Goss, Sr. Planning Engineer jackie.goss@energytrust.org





Energy Trust Pilots November 17, 2017



Agenda

- Pilot process
 - What it is, what it isn't
 - Goals
- General categories
- Pilots to measures
- Current pilots
- Improvements to the process
- Questions



Pilot Process

- Why pilots?
- What they are
- What they are not
- Who develops them?
- What are the goals?
- Why do we have a pilot process?



Pilot Process Flowchart







Three Key Pilot Process Objectives:

- 1. Pilot research objectives are clear
- 2. Agreement on the research plan
- 3. Ensure that the pilot is a priority

The goal is a successful pilot with actionable results



What We Test

- Technologies
- Behavioral change techniques
- Delivery methods



Examples

- Advanced thermostats
- Water submetering
- Heat pumps in existing manufactured homes





Pilot to Measure

- •Now it's a measure, right?
- Normal measure development process

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Current Pilots

Commercial and Industrial

- Ductless Heat Pumps in Multifamily
- Variable Refrigerant Flow (VRF)
- Luminaire Lighting Control (LLC) in collaboration with NEEA
- Water Submetering
- Advanced Lighting Integrated Controls

Residential

- Nest Seasonal Savings
- Heat Pumps in Existing Manufactured Homes
- Manufactured Home Replacement
- Advanced Thermostat Automation



Improvements

- Streamline early work
- Post evaluation wrap up meeting
- Fail faster?





Questions?



Thank You

Kenji Spielman, Planning Engineer Kenji.Spielman@energytrust.org 503.445.2947





Pay for Performance 2017 Pilot Update November 17, 2017



Pay for Performance recap



Measures include O&M, behavioral and capital



Incentives paid annually for 3 years (metered and modeled)



Pay for Performance allies are key - contract between customer and ally



Incentives

0&M	Capital (includes O&M)
\$0.05/kWh	\$0.08/kWh
\$0.60/therm	\$1.00/therm
Capped at 200% of 1 st year incentives	Capped at 150% of 1 st year incentives
<= 50% of savings from capital	> 50% of savings from capital







First year goals

- Mid-2019
- 6 projects
- •3 million kWh
- •100,000 annual

therms



Evaluation considerations

- Realization of savings
 - Adjustment factor
 - Over/under estimation
 - Baseline of measures (lighting and capital)
- Measure life
- Incentive levels
- Quality of energy models
- Project life cycle costs



Evaluation areas of interest

- Market interest in each of the two pathways
- Deeper savings than other offerings
- Contracting structure
- Market barriers





Thank you

Kathleen Belkhayat kathleen.belkhayat@energytrust.org 503.307.6114



Energy Trust Manufactured Home Replacement Pilot November 17, 2017





Energy Trust and Manufactured Homes

- Standard Residential Offers For Existing Homes
 - Heating systems
 - Windows
 - Insulation
 - Water Heating
 - Smart Thermostats
 - Appliances
 - Lighting
 - Low-flow Showerheads
 - Energy Saver Kits
 - Solar Electric Systems

More information www.energytrust.org/residential
Older Manufactured Homes

- High energy burden
- Structurally cannot accommodate increased insulation
- Frequently in distressed condition, diminishing energy benefit of individual repairs and improvements
- Repair costs can exceed value of the home
- Over 80,000 older vintage homes in Oregon
- Not going anywhere, natural rate of retirement 1.4% of existing stock per year



Manufactured Home Replacement Pilot

- Two year pilot launched June 2017
- Replace 20 to 40 older homes with new energy-efficient homes
- Goal is to better understand energy impact, quality of life improvements, project costs, barriers to participation and key elements of a successful program design

Research Objectives



Opportunities for partnership:

- Coordination between funders
- Collaboration between lenders and funders
- Research and demonstration
- Tailor programs to meet the needs of leadership organizations such as CASA of Oregon, St.
 Vincent de Paul and Neighborworks

Affordable Payment

Opportunity

Access to Financing

Stacked Funding

+

Utility Energy Efficiency Incentive + Poverty Alleviation + Housing Preservation + Foundation Grants





Thank You

Mark Wyman, program manager mark.wyman@energytrust.org 503.445.2950



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	Climate Zone: West of the Cascades								
	Home configuration	Year built	Energy savings	Maximum Energy Trust Incentive					
	Single Wide	Pre-1976	7,937 kWh	\$10,000					
	single-wide	1976 1994	4,723 kWh	\$7,500					
	Double-Wide	Pre-1976	15,148 kWh	\$15,000					
		1976-1994	9,653 kWh	\$12,500					
	Climate Zone: East of the Cascades								
	Home configuration	Year built	Energy savings	Maximum Energy Trust Incentive					
	e:l- wid-	Pre-1976	14,935 kWh	\$15,000					

1976-1994 9,695 kWh

1976-1994 18,696 kWh

27,656 kWh

Pre-1976

\$9,000

\$17,500

\$15,000

Single-Wide

Double-Wide

Access to Financing: Challenges

- Chattel loans have higher rates and shorter terms as compared with conventional mortgage products
- 68% of MH mortgages are classified as "Higher Priced Mortgage Loan" (as compared to 3% of site built)*
- MH finance market collapsed in late 90's early 2000's. High defaults due to irresponsible lending. Chattel lending has since consolidated to a handful of privately held firms, secondary market never recovered.

*Manufactured Housing Consumer Finance In The United States. (2014, September). Retrieved from http://files.consumerfinance.gov/f/201409_cfpb_report_manufactured-housing.pdf"

	Consumer 1: Loan at APOR	Consumer 2: Loan at HPML APR	Consumer 3: Loan at the HOEPA high-cost APR
Manufactured home price	\$80,000	\$80,000	\$80,000
20-year fixed-rate loan at 80% loan-to-value	\$64,000	\$64,000	\$64,000
Rate	3.36%	4.87%	9.87%
Percentage points above APOR	0%	1.50%	6.50%
Monthly payment	\$367	\$418	\$618

"Manufactured Housing Consumer Finance In The United States. (2014, September). Retrieved from http://files.consumerfinance.gov/f/201409_cfpb_report_manufactured-housing.pdf"

Residential Sector Structure Changes November 17, 2017



Structure

Residential Contract Structure

Energy Trust



Residential Staff Structure





New Opportunity Development

- Strategy and Initiative Development
- Engineering and Technical Services
- Market Intelligence
- Pilot and Initiative Management
- Technical Stakeholder Engagement

Customer Acquisition

- Strategic Customer
 Acquisition
- Field and Ally Services Management
- Marketing
- Outreach
- Market Intelligence
- Customer
 Communities

Operations Management Fulfillment

- Budget / Portfolio Management
- Forecasting
- Contract Management
- Incentive Processing
- Reporting
- Call Center
- Operations and Controls

Road Ahead

- Now Transition and deliver 2017 savings
- Jan. 2, 2018 new structure begins
- Transition complete Mid Jan. 2017 yearend close



Questions



thad.roth@energytrust.org





Changes to Draft 2018 Budget & 2018-19 Action Plan

November 17, 2017



Today's Presentation

- Budget comments received so far
- Changes underway for Final Proposed Budget
- Key budget takeaways
- Next Steps



Highlights from Budget Comments

- Budget comments due end of today
- Feedback from public presentations indicate
 - Overall support draft budget and action plans
 - Concerns with changes in gas savings and costs, particularly in residential
- Follow-up on CAC questions
 - Shifts in EPS New Homes cost allocations—Staff and gas utilities met to discuss details, action items from meeting in-progress
 - Gas utility levelized cost comparisons—After initial follow-up, conversations ongoing
 - NEEA savings and budget allocation by utility—Upon review, staff revised allocation methodology
- Comments received so far
 - Coordination with low-income programs and organization

OPUC Comments

- Summarized status of last year's recommendations
- Supported 2018 budget and 2018-19 action plan
- Concern about staffing and administrative costs
- Requested prioritization of the following activities in 2018:
 - Continue in-progress responses to 2017 recommendations
 - Revise two performance metrics: staffing costs; administrative and program support costs
 - Report on Diversity, Equity and Inclusion activities, LED lighting trends across all sectors and solar system project installations



Summary of changes

Changes Underway to Energy Efficiency Budget Draft to Final Proposed

- Focused primarily on
 - Reviewing staffing/contractor costs
 - Extending timing of strategic initiatives and system/tool upgrades
- Efficiency expenditures remained about the same, increasing by only \$74,000
- There were small increases in electric and gas savings
 - Electric savings increased 0.44%, includes
 - » Existing Buildings increase in Pacific Power territory
 - Gas savings increased 0.43%

Draft to Final Proposed Savings Changes

	2018 Draft Savings	2018 Final Proposed Savings	Total Change	% Change
PGE (aMW)	37.0	36.6	-0.44	-1.2%
Pacific Power (aMW)	19.5	20.2	0.69	3.5%
NW Natural Oregon (Th)	5,620,616	5,655,344	34,728	0.6%
NW Natural Washington (Th)	359,244	359,880	636	0.2%
Cascade Natural Gas (Th)	554,191	547,106	-7,085	-1.3%
Avista (Th)	348,014	349,520	1,506	0.4%
Total Electric Savings (aMW)	56.5	56.8	0.25	0.4%
Total Gas Savings (MMTh)	6.9	6.9	0.03	0.4%

aMW: average megawatts MMTh: million annual therms

Columns may not total due to rounding

Draft to Final Proposed Expenditures Changes

	2018 Draft Expenses (\$ Million)	2018 Final Proposed Expenses (\$ Million)	Total Change (\$ Million)	% Change
PGE (efficiency)	\$97.69	\$96.67	-\$1.02	-1.0%
Pacific Power (efficiency)	\$56.59	\$57.85	\$1.26	2.2%
NW Natural Oregon	\$24.82	\$24.79	-\$0.03	-0.1%
NW Natural Washington	\$2.39	\$2.37	-\$0.02	-0.8%
Cascade Natural Gas	\$2.85	\$2.72	-\$0.14	-4.8%
Avista	\$1.12	\$1.14	\$0.02	1.4%
Total Electric Efficiency	\$154.28	\$154.52	\$0.25	0.2%
Total Gas Efficiency	\$31.18	\$31.01	-\$0.17	-0.6%

Columns may not total due to rounding

2018 Utility Savings & Generation Summary

	2017 Budget Savings & Generation (Net) aMW or MMTh	2017 Budget (\$ Millions)	2018 Final Proposed Budget Savings & Generation (Net) aMW or MMTh	2018 Final Proposed IRP Target* (Net) aMW or MMTh	2018 Final Proposed Budget (\$ Million)	2018 Final Proposed Budget Levelized Cost per kWh or therm
	04.07	\$ \$\$\$ \$4	00 50	04.07	\$ 00.07	
PGE (Efficiency)	34.97	\$93.61	36.59	31.87	\$96.67	2.9¢
Pacific Power (Efficiency)	21.43	\$55.80	20.18	19.76	\$57.85	3.2¢
	0.05	\$ 00.00	F 00		A O 4 Z O	
NW Natural Oregon	6.25	\$23.89	5.66	4.44	\$24.79	32.5¢
NW Natural Washington	0.28	\$2.08	0.36	0.36	\$2.37	51.6¢
Cascade Natural Gas	0.56	\$2.47	0.55	0.53	\$2.72	37.2¢
					·	
Avista	0.32	\$0.90	0.35	0.35	\$1.14	21.9¢
PGE (Renewable)	1.23	\$10.03	1.08	N/A	\$6.81	N/A
Pacific Power (Renewable)	1.63	\$9.80	0.82	N/A	\$6.52	N/A

aMW: average megawatts MMTh: million annual therms Net savings * IRP targets reflected in net savings using 2018 Energy Trust net-to-gross ratios. These net targets align with the energy efficiency potential incorporated in current utility IRP filings.

Key Takeaways

- 1. Sustaining a high level of savings with lower revenues
- 2. Overall savings stable even with significant decline in residential savings; downturn in overall savings expected in 2019
- 3. Residential lighting transition underway, earlier than estimated
- 4. Volume of energy efficiency projects and customer transactions remains high
- 5. Increasing cost per unit of savings
 - Due to market transformation successes, lower avoided costs, fewer savings per project
- 6. Underserved markets a strong focus moving forward
- 7. Solar market in transition; challenging renewable project economics
- 8. Resource demands on organization continue growing

Budget Outreach Schedule

October & November

December

RAC/CAC presentations, Oct. 25 Draft budget online, Nov. 1 Recorded webinar online, Nov. 7 Board of Directors, Nov. 8 OPUC public meeting, Nov. 16 RAC/CAC updates, Nov. 17 **Public comments due Nov. 17**

Comments reviewed, final adjustments

+ www.energytrust.org/about/budget

+ Send comments to info@energytrust.org

Final proposed budget online, **Dec. 8**

Board of Directors, **Dec. 15,** Action on Final Proposed 2018-19 Budget and Action Plan

Discussion and Feedback

- What questions do you have?
- What information needs clarification?
- Other feedback?

+ www.energytrust.org/about/budget

+ Final proposed budget will be posted online **December 8**

Thank You info@energytrust.org 1.866.368.7878





Supplemental slides

Final Proposed: 2018 Electric Savings, Budget by Program

	2017 Budget aMW Savings (Net)	2017 Electric Cost (\$ Million)	2018 Final Proposed Budget aMW Savings (Net)	2018 Final Proposed Electric Cost (\$ Million)	2018 Final Proposed Levelized Cost/kWh	% 2018 Savings
Production Efficiency	13.6	\$31.8	19.4	\$35.2	2.1¢	34%
Existing Buildings	12.1	\$41.6	14.9	\$49.0	3.4¢	26%
Existing Multifamily	2.6	\$11.2	1.8	\$8.9	5.1¢	3%
Residential	14.8	\$40.0	7.2	\$34.5	4.9¢	13%
New Buildings	6.3	\$17.5	6.3	\$19.9	3.3¢	11%
NEEA	7.0	\$7.3	7.2	\$7.1	1.3¢	13%
TOTAL	56.4	\$149.4	56.8	\$154.5	3.0¢	

aMW: average megawatts Net savings Columns may not total due to rounding
Draft: 2018 Electric Savings, Budget by Program

	2017 Budget aMW Savings (Net)	2017 Electric Cost (\$ Million)	2018 Draft Budget aMW Savings (Net)	2018 Draft Electric Cost (\$ Million)	2018 Draft Levelized Cost/kWh	% 2018 Savings
Production Efficiency	13.6	\$31.8	19.3	\$35.1	2.1¢	34%
Existing Buildings	12.1	\$41.6	14.7	\$48.6	3.4¢	26%
Existing Multifamily	2.6	\$11.2	1.8	\$9.1	5.3¢	3%
Residential	14.8	\$40.0	7.2	\$34.5	4.9¢	13%
New Buildings	6.3	\$17.5	6.3	\$19.9	3.3¢	11%
NEEA	7.0	\$7.3	7.2	\$7.1	1.3¢	13%
TOTAL	56.4	\$149.4	56.5	\$154.3	3.0 ¢	

aMW: average megawatts Columns may not total due to rounding Net savings

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Final Proposed: 2018 Natural Gas Savings, Budget by Program

	2017 Budget MMTh Savings (Net)	2017 Gas Cost (\$ Million)	2018 Final Proposed Budget MMTh Savings (Net)	2018 Final Proposed Gas Cost (\$ Million)	2018 Final Proposed Levelized Cost/therm	% 2018 Savings
Production Efficiency	1.1	\$2.9	1.1	\$2.9	24.4¢	15%
Existing Buildings	2.2	\$9.4	1.6	\$6.9	38.7¢	24%
Existing Multifamily	0.2	\$0.9	0.2	\$1.1	50.4¢	2%
Residential	3.0	\$12.5	3.1	\$16.3	33.7¢	45%
New Buildings	0.9	\$2.4	0.9	\$2.2	20 <i>4 c</i>	14%
	NI/A	Ψ <u></u>	N/A	Ψ2.2 ¢1 5	20.4¢	7770
NECA	IN/A	⊅1. ∠	IN/A	\$1.S	IN/A	
TOTAL	7.4	\$29.3	6.9	\$31.0	33.3¢	

MMTh: million annual therms Net savings Columns may not total due to rounding Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years.

Draft: 2018 Natural Gas Savings, Budget by Program

	2017 Budget MMTh Savings (Net)	2017 Gas Cost (\$ Million)	2018 Draft Budget MMTh Savings (Net)	2018 Draft Gas Cost (\$ Million)	2018 Draft Levelized Cost/therm	% 2018 Savings
Production Efficiency	1.1	\$2.9	1.1	\$2.9	24.6¢	15%
Existing Buildings	2.2	\$9.4	1.6	\$7.0	39.1¢	24%
Existing Multifamily	0.2	\$0.9	0.2	\$1.1	47.3¢	3%
Residential	3.0	\$12.5	3.1	\$16.5	34.1¢	45%
New Buildings	0.9	\$2.4	0.9	\$2.2	20.5¢	14%
NEEA	N/A	\$1.9	N/A	\$1.5	N/A	
TOTAL	7.4	\$29.3	6.9	\$31.2	33.5¢	

MMTh: million annual therms Columns may not total due to rounding Net savings Energy Trust allocated budget to NEEA for gas market transformation activities; savings are expected in subsequent years.



Diversifying Participation

- Increase outreach to small/medium businesses and agriculture
- Identify and prioritize strategies to increase access to solar in lowincome communities
- Contract with community-based organizations to reach under-served communities in residential sector
- Drive forward organizational diversity, equity and inclusion strategies and activities



Drive forward organizational diversity, equity and inclusion strategies and activities

- Adopt organizational diversity, equity and inclusion operations plan
- Propose board-level policy
- Establish specific goals across the organization
- Apply diversity, equity and inclusion lens to our internal operations and how we deliver programs
- Develop and deepen relationships with organizations that serve diverse customer groups
- Develop systems and process for demographic data collection and use







4.08.000-P Equity Policy

History			
Source	Date	Action/Notes	Next Review Date
Board Decision	May 22, 2002	Approved (R104)	May 2005
Policy Committee	March 5, 2005	Postpone review	11/05
Board Decision	September 7, 2005	Revised (R352)	September 2008
Policy Committee	December 2, 2008	Replaced	September 2011
		references to	
		numerical electric	
		and gas goals	
Board Decision	October 5, 2011	Revised (R595)	October 2014
Board Decision	October 1. 2014	Revised (R714)	October 2017

Introduction

Recognizing the Energy Trust's long-term goals to save electricity and natural gas, and that other public purpose funds have been earmarked for schools and low income housing needs, the Energy Trust of Oregon, Inc., Board of Directors hereby adopts as policy using the following principles in designing energy efficiency programs and allocating funding among various electricity and gas customer classes:

Policy

- Make programs available to all eligible electricity and gas customer classes by implementing programs in the residential, commercial, and industrial sectors.
- Design and implement programs for private utility electricity and gas customers that have not had access to prior conservation programs and/or where penetration rates have been historically low, such as rural customers.
- Monitor penetration rates for all programs and adjust them as needed to ensure that all private utility electricity and gas customer classes are being served. Energy Trust will pay particular attention to programs for underserved customers.

4.08.000-P Diversity, Equity, and Inclusion Policy

History			
Source	Date	Action/Notes	Next Review Date
Board Decision	May 22, 2002	Approved (R104)	May 2005
Policy Committee	March 5, 2005	Postpone review	11/05
Board Decision	September 7, 2005	Revised (R352)	September 2008
Policy Committee	December 2, 2008	Replaced references to numerical electric and gas goals	September 2011
Board Decision	October 5, 2011	Revised (R595)	October 2014
Board Decision	October 1. 2014	Revised (R714)	October 2017

Introduction

Energy Trust envisions a high quality of life, a vibrant economy and a healthy environment and climate for generations to come, built with renewable energy, efficient energy use and conservation. Energy Trust recognizes that to achieve this vision, all utility customers must benefit from our programs, but certain customers may be underserved by our programs such as communities of color, rural communities, and low income customers.

Energy Trust commits to enhancing diversity, equity and inclusion in our programs and in internal operations in order to work to serve all communities and reach critical Energy Trust goals. We will advance diversity, equity and inclusion in our programs and internal operations through meaningful collaboration with our utility funders, trade allies, program allies, and customers and with geographic and culturally specific communities, organizations and businesses.

Policy

- 1. Energy Trust will make programs available to all eligible electricity and gas customer classes by implementing programs in the residential, commercial, and industrial sectors.
- 2. Energy Trust will monitor participation rates for all programs and adjust them as needed to ensure that all investor-owned utility electricity and gas customer classes in Energy Trust territory are being served.
- 3. In addition to providing programs to reach all customer groups, Energy Trust will design and implement programs strategies specifically to reach customers who have been underserved by Energy Trust programs and/or where penetration rates have been historically low, such as rural customers, communities of color, and low-income communities in Energy Trust service territory.
- 4. Energy Trust will use a diversity, equity and inclusion lens through which to:
 - a. Internally, use a diversity, equity and inclusion lens through which to:
 - b. strategize and plan for Energy Trust program delivery
 - c. deliver programs and services
 - d. partner and collaborate
 - e. allocate resources
 - f. communicate and market

- g. build our workforce
- h. evaluate our work
- 5. Energy Trust will develop an diversity, equity and inclusion operations plan that:
 - a. includes goals, strategies and tactics
 - b. assesses and measures progress
 - c. learns from mistakes and successes
 - d. shares progress publicly on no less than an annual basis

6. Energy Trust will establish a Diversity Advisory Council to provide advice and resources to the board of directors to support Energy Trust's diversity, equity and inclusion action plan and to advise the board of directors on assessing and measuring progress toward goals of such plan.

7. Energy Trust will enhance diversity and inclusivity on the board of directors.

8. For the first three years after adoption of these 2017 changes, the Energy Trust Policy Committee will review this policy annually to take account of new information and experience.