

Energy Trust Board of Directors

July 25, 2018

159th Board Meeting

Wednesday, July 25, 2018

Oregon Institute of Technology Campus – Sunset Room

3201 Campus Drive, Klamath Falls, OR 97601

Energy Trust of Oregon Office:

421 SW Oak Street, Suite 300, Portland, Oregon 97204

Agenda		Tab	Purpose
10:00 a.m.	Welcome and Introduction (Roger Hamilton) Introduction of Oregon Institute of Technology (OIT) President Nagi G. Naganathan		
10:05 a.m.	Welcome and Remarks (OIT President, Nagi G. Naganathan)		
10:15 a.m.	Board Meeting—Call to Order (Board President, Roger Hamilton) <ul style="list-style-type: none"> Approve agenda 		
	General Public Comment <i>The president may defer specific public comment to the appropriate agenda topic</i>		
	Consent Agenda – R842.....	1	Action
	<i>The consent agenda may be approved by a single motion, second and vote of the board. Any item on the consent agenda will be moved to the regular agenda upon the request from any member of the board.</i> <ul style="list-style-type: none"> May 17- 18, 2018 Strategic Planning Workshop meeting minutes June 6, 2018, Board meeting minutes Committee Assignments – R843 		
10:40 a.m.	President’s Report (Roger Hamilton)		Info
10:50 a.m.	Staff Report (Michael Colgrove) <ul style="list-style-type: none"> Business Planning Process High Bay Lighting Update Secretary of State Audit 		Info
11:20 a.m.	Strategic Planning Update (Committee chair Mark Kendall and staff liaison Debbie Menashe)		Info
11:50 a.m.	Board Learning Topic: Awareness and Education as a Long Term Investment in Program Engagement (Sue Fletcher and Shelly Carlton).....	2	Info
12:20 p.m.	Lunch (on-site)		
12:50 p.m.	Energy Programs <ul style="list-style-type: none"> Production Efficiency Program <ul style="list-style-type: none"> Program Delivery Contracts Authorization (Lindsey Diercksen) – R844, R845, R846..... Authorization to Move Funds Across Sectors (Amanda Potter) – R847..... Manufactured Homes Pilot Proposal (Mark Wyman) – R848..... 	3 4	Actions Action
1:50 p.m.	Committee and Advisory Council Reports <ul style="list-style-type: none"> Finance Committee (Susan Brodah)..... Evaluation Committee (Lindsey Hardy)..... 	5 6	Info Info

- Policy Committee (Alan Meyer)..... 7 Info
- Board Nominating Committee (Debbie Kitchin) Info
- Conservation Advisory Council (Lindsey Hardy, Alan Meyer)..... 8 Info
- Renewable Energy Advisory Council (Alan Meyer, Ernesto Fonseca)..... 9 Info

3:00 p.m. **Adjourn the Public Session**

**The next meeting of the Energy Trust Board of Directors will be held on
Wednesday, October 17, 2018, at 10:30 a.m.
at 421 SW Oak
Street, Suite 300, Portland, Or. 97204**

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Tab 1

Board Meeting Minutes—Annual Board Strategic Planning Workshop

May 17-18, 2018

Board members present: Susan Brodahl, Dan Enloe, Ernesto Fonseca, Roger Hamilton, Lindsey Hardy, Mark Kendall, Debbie Kitchin, Alan Meyer, John Reynolds, Anne Root, Eddie Sherman, Steve Bloom (Oregon Public Utility Commission ex officio), Ruchi Sadhir (Oregon Department of Energy)

Board members absent: Melissa Cribbins, Janine Benner (Oregon Department of Energy ex officio)

Staff attending: Mike Bailey, Scott Clark, Amber Cole, Michael Colgrove, Hannah Cruz, Jack Cullen, Andy Eiden, Becky Engel, Sue Fletcher, Elizabeth Fox, Fred Gordon, Andy Hudson, Jessica Iplicki, Jed Jorgensen, Betsy Kauffman, Oliver Kesting, Steve Lacey, Dave McClelland, Debbie Menashe, Spencer Moersfelder, Alex Novie, Amanda Potter, Pati Presnail, Becky Rein, Thad Roth, Peter Schaffer, Greg Stokes, Julianne Thacher, Zabyn Towner, Mark Wyman John Volkman, Jay Ward, Peter West, Whitney Winsor, Scott Swearingen, Marshall Johnson

Others attending: Anne Snyder Grassman (Portland General Electric), Rick Hodges (NW Natural), Elaine Prause (OPUC), Holly Braun (NW Natural), Lisa McGarity (Avista), Jason Eisdorfer (OPUC), Tamy Linver (NW Natural), Mathew Doyle (NW Natural), Bill Edmonds (NW Natural), John Charles (Cascade Policy Institute)

Welcome and Introductions

President Roger Hamilton called the meeting to order at 8:03 a.m. and welcomed board members to Energy Trust's Board Strategic Planning Workshop. Roger announced that Dan Enloe is retiring from the board and this will be his last board meeting. John Reynolds, a founding board member, will also exit the board following this meeting. Roger presented certificates to the two retiring board members.

John introduced Dr. Ernesto Fonseca as Energy Trust's newest board member. Ernesto received an architecture degree in Mexico, then attended Arizona State for a master and PhD in environmental design and planning. Ernesto is CEO of Hacienda, which serves the Latino community in Northeast Portland.

RESOLUTION 836 ELECTING ERNESTO FONSECA TO THE ENERGY TRUST BOARD OF DIRECTORS

WHEREAS:

1. Heather Eberhardt resigned her position on the board effective October 12, 2017, due to potential conflicts of interest between her service on the Energy Trust Board of Directors and her employment with PacifiCorp. Her position on the board has remained open and unfilled since that time.
2. The board Nominating Committee has reviewed candidates for the open board seat and nominates Ernesto Fonseca, Ph.D., Executive Director of Hacienda Community Development Corporation in Portland, Oregon to fill Ms. Eberhardt's remaining term.

It is therefore RESOLVED:

That the Energy Trust of Oregon, Inc., Board of Directors elects Ernesto Fonseca to the Energy Trust Board of Directors to a term expiring February 2019, subject to all requirements of the Bylaws of Energy Trust.

Moved by: Debbie Kitchin

Seconded by: Anne Root

Vote: In favor: 8 Abstained: 0
 Opposed: 0

Roger described context for Energy Trust's next strategic plan, including Energy Trust's success in market transformation. Energy Trust may need to reinvent itself. Roger thanked the Board Strategic Planning Committee for planning this retreat and introduced Board Strategic Planning Committee Chair Mark Kendall.

Mark described the agenda, which will begin with a report on performance to Energy Trust's current 2015-2019 Strategic Plan. Energy Trust is on track to exceed 2015-2019 Strategic Plan goals. Mark encouraged board members to consider new opportunities during this workshop, including the learning topic papers prepared by staff. The final proposed 2020-2024 Strategic Plan will be approved at the October 2019 board meeting.

Roger introduced Holly Valkama as the workshop facilitator. Holly also worked on Energy Trust's recent management audit.

Roger asked for public comment. There was no public comment at this time.

Ruchi Sathir arrived at 8:25 a.m.

Opening Remarks: Workshop Agenda Recap and Strategic Planning Overview

Michael Colgrove thanked the Strategic Planning Committee members and staff, and recognized Becky Rein and Whitney Winsor for managing the workshop logistics. Michael described the workshop agenda.

Eddie Sherman arrived at 8:40 a.m.

Michael provided context for the board learning topic papers and posters, which are intended to inform board members of pertinent and applicable topics for the 2020-2024 Strategic Plan.

Michael described foundational strategic plan elements, including Energy Trust's vision, mission and purpose, unique value and organizational values.

The board noted that Energy Trust's mission includes the phrase "to those we serve," and asked if the board should examine who it serves as part of strategic plan conversations. Energy Trust creates benefits for people beyond investor-owned utility ratepayers, such as by keeping energy costs low for all ratepayers in the region. Energy Trust could also consider expanding services to other constituents.

Strategic Plan Progress Update Year 3

Hannah Cruz, senior communications manager, provided a progress update on the first three years of Energy Trust's 2015-2019 Strategic Plan, and requested feedback on what Energy Trust should focus on for 2019, the last year of Energy Trust's current Strategic Plan. Spencer Moersfelder, planning manager, was present to answer questions. Energy Trust's 2015-2019 Strategic Plan goals were to save 240 average megawatts of electricity, save 24 million annual therms of natural gas and generate 10 aMW of clean energy. Other goals were to expand participation, make energy efficiency more affordable, identify new technologies with energy saving potential, provide project development support and incentives for renewable energy projects, remain flexible and open to new opportunities, continuously improve programs and services, and work more efficiently.

Through year three of Energy Trust's 2015-2019 Strategic Plan, Energy Trust achieved 74 percent of the energy efficiency goal, 83 percent of the gas goal and 114 percent of the renewable generation goal. Energy efficiency achievements were influenced by strong new residential and commercial construction and accelerated market acceptance of LEDs.

The board asked if cumulative savings include measure die off. Hannah responded that if measures had less than three-year lives, then die off would be included in savings since 2015.

Hannah continued that when the 2015-2019 Strategic Plan renewable energy goals were set, it was a period of uncertainty. Since then, there has been very strong demand for solar system installations.

The board pointed out that if we exceed Strategic Plan goals by a large margin, it means we could have done a better job of forecasting.

Hannah continued that Northwest Energy Efficiency Alliance began seeking natural gas market transformation beginning in 2015. NEEA and Energy Trust work together to develop and implement new energy efficiency technologies, with NEEA working upstream.

The board asked if NEEA works on efficiency of electric vehicle chargers, including solar electric vehicle charging technology. The board is interested in exploring this technology. Mike Bailey, engineering manager, responded that NEEA has reviewed some chargers, and has seen that the chargers are already extremely energy efficient. NEEA will continue to monitor the efficiency of this technology. The board would like to see Energy Trust incent the least efficient tier of chargers. The board is also interested in exploring vehicle grid integration. Michael summarized that chargers are not cost-effective enough for Energy Trust to support and added that this is a topic under discussion with NEEA's board of directors.

Hannah added that Energy Trust incents solar installations that customers may pair with electric vehicle charging and battery storage. Betsy Kauffman, renewable energy sector lead, explained that Energy Trust is exploring providing incentives for customers that install battery storage in tandem with solar panels.

As an outcome of NEEA's work, new products are put on the market with potential energy efficiency savings that Energy Trust could support. Nest thermostats and Path to Net Zero are example offerings that started as NEEA efforts and are now offered by Energy Trust directly.

The board asked about nanoparticle coatings on solar cells that increase energy production. How would a technology like that flow into Energy Trust's work? Mike Bailey explained that NEEA does not work on renewable energy technologies, so Energy Trust would wait until the technology is available on the market to provide incentives. Peter West, director of energy programs, offered to check into this technology, and reiterated that Energy Trust waits until technologies are commercially ready. The board asked if Energy Trust works with National Renewable Energy Laboratory and Sandia National Laboratories, and Peter responded that Energy Trust has relationships with both.

The board asked if Energy Trust can provide progress to NEEA's achievement of five-year goals. Hannah will follow up with this information.

NEEA is one of the first entities in the nation to explore natural gas market transformation. So far, NEEA has completed market and product assessment for one technology and has moved five additional technologies into the evaluation phase.

Hannah described Energy Trust's progress toward the expand participation goal. To expand participation, Energy Trust is focused on gathering data and building relationships. In 2017, Energy Trust conducted focus groups, including with Latino and Asian American business owners and groups of residential customers. Results indicate there are opportunities to better serve customers, including residential customers earning less than \$75,000 per year. Energy Trust developed a diversity, equity and inclusion lens and operations plan, with input from a consultant.

The board asked if Energy Trust has statistics to measure current and future diversity, equity and inclusion engagement. Hannah explained that current work is to develop benchmarks for reaching underserved customers. The board affirmed that Energy Trust needs a baseline. Michael responded that Energy Trust completed a participation and penetration study in 2017. The board added that Energy Trust should review data with community partners and get input on methodology. Hannah responded that staff are planning to vet data with community-based organizations.

Hannah described Energy Trust's work to improve operational effectiveness through four key processes: internal procurement and payment, incentive processing, customer service and customer information, and energy project tracking. The internal procurement and payment process improvement was put on hold due to staffing constraints, but it is expected to be picked up in 2018 for implementation in 2019. The three other process improvements were advanced last year. An example of a customer service and customer information improvement is improvements to Energy Trust's Find a Contractor online tool that will launch in summer 2018.

The board appreciated Energy Trust's candidness in explaining which processes are off track. The board discussed the term customer, and noted that participants are not technically customers because they do not purchase services from Energy Trust. Hannah explained that participants are customers of the utilities, not Energy Trust. The board concluded that customers is an appropriate term because customers are buying energy efficiency or renewable energy. Another term could be end user.

In 2016, Energy Trust established four improvement areas, including organizational review, lean startup customer development, budget process reassessment, and data and tracking systems enhancements. The board will receive presentations regarding the organizational review and budget process reassessment projects in June.

The board noted that the next Energy Trust management audit is expected in 2019. The board requested that the audit be completed early enough that the results could be incorporated into the 2020-2024 Strategic Plan, which will be approved by the board in October 2019.

Hannah described new opportunities to propel the organization, including complementary initiatives, response to policy initiatives and load and demand management with utilities.

The board asked how smart thermostats are part of load and demand management. Spencer explained that there are several efforts underway to explore smart thermostats for energy efficiency and demand management.

Hannah described staff engagement. Drivers of engagement include future growth, leadership and accountability, rewards and recognition, work alignment and work/life balance. In the 2017 employee staff survey, staff expressed concern about high workloads. The board asked about the threshold of three-quarters of statements with 75 percent or more agreeing. Spencer explained that staff provided answers on a five-point scale, and the organization defined highly engaged as rankings of 4 or 5. Hannah added that a specific threshold was not established in the 2015-2019 Strategic Plan, so evaluation and human resources staff determined this threshold. Greg Stokes, former human resources manager, summarized that it is a five-point scale for question that measures single aspects of engagement. The majority of Energy Trust staff are engaged.

The board appreciated this discussion because staff are Energy Trust's most powerful resource. It's important for a strategic plan to address organizational issues of importance to staff. The board asked about the frequency of the staff survey. It's completed every year. Staff also complete the Oregon Business Magazine 100 Best Nonprofits to Work for in Oregon survey that helps Energy Trust benchmark against other nonprofits on an annual basis. Detailed results of the staff survey are reviewed by the full board.

Hannah asked for input on what Energy Trust should focus on in 2019. The board requested that Energy Trust continue to achieve more renewable energy generation despite already achieving the renewable energy strategic plan goal.

The board is interested in learning more about some of the NEEA emerging technologies. Hannah responded that NEEA gives an annual presentation to the Energy Trust board, and staff can explore adding these details.

The board suggested considering adding the governor's executive order and information sharing to the policy section of the Strategic Plan Dashboard. Staff are currently doing this and can reflect it in next year's dashboard.

The board would like to see more detail about diversity, equity and inclusion and how that work will be continued in 2018 and 2019. The board is interested in understanding how the Portland Clean Energy Fund could impact Energy Trust. The board is also interested in NEEA's consideration of emerging technologies for low- and moderate-income customers. The board asked to receive updates about baselines and marketing opportunities for diversity, equity and inclusion.

The board asked for ongoing board engagement regarding sunset of Senate Bill 1149, and asked if there are new opportunities for Energy Trust.

The board is also curious about complementary initiatives, such as woodstove heat conversations and work with Washington County community action agencies.

The board is interested in mapping demographics and population data to see who Energy Trust is serving, including by income and ethnicity. It's important to see succinct, summarized data visualizations and infographics to easily understand concepts. Mapping tools are of particular interest. interested in mapping tools.

Lisa McGarity, Avista, suggested aligning Energy Trust's strategic planning timeline with its potential three-year budget project. Hannah explained that the board will receive a presentation in June

regarding changing Energy Trust's budget project to a three-year planning cycle. The Board Finance Committee has already received this presentation.

The board took a break from 10:08 to 10:25 a.m.

Presentations and Briefings on Final Board Learning Topics

Holly introduced presentations on the final three board learning topics and encouraged board discussion. Posters summarizing each topic are available to view during breaks and lunch.

Expanded Goals Supporting Energy Efficiency and Renewable Generation, Debbie Menashe and John Volkman

Debbie Menashe presented on expanded goals to support energy efficient and renewable generation. The paper describes goal-setting best practices and other goal areas for 2020-2024 Strategic Plan consideration. The first level of goal setting is a vision statement, followed by mission and purpose. Energy Trust's strategic plans have always had goals, most of which were quantitative. In the 2015-2019 Strategic Plan, Energy Trust adopted qualitative goals. It is complex and challenging to measure and track progress against qualitative goals, as is evident in the Strategic Plan Dashboard presentation. In the paper, staff looked at other organizations to see best practices for goal setting, including Oregon Housing and Community Services, Proctor and Gamble and NEEA. NEEA sets strategic goals plus granular and quantifiable metrics within those goals.

Ruchi Sadhir asked about carbon dioxide as an incidental benefit. Even though Energy Trust does not capture the monetary benefit of carbon dioxide reductions, it could be valuable to track. Debbie responded that Energy Trust tracks on carbon dioxide reductions, but the organization does not quantify the monetary benefit.

The board described peak load energy use as a consideration that has emerged since SB 1149. Could the OPUC consider making this part of Energy Trust's work? Debbie responded this could be a topic for discussion today. Michael added that Energy Trust could set a goal with a certain amount of energy efficiency savings from areas with peak constraints.

The board recalled a past discussion about how to balance opportunities for different customer types. For example, the board discussed prioritizing the cheapest energy efficiency opportunities for industrial customers, but decided to balance offerings for all customer types. The organization should continue to prioritize equity and services for all customer types as it develops the next strategic plan.

The board asked for a reminder of the five renewable energy technologies, which are solar, hydropower, biopower, geopower and wind. Wave energy is not yet developed or reliable enough to support. Oregon is one of only a few states with all five of these renewable generation sources.

Relationship Mapping, Amber Cole

Amber Cole, director of communications and customer service, presented on relationship mapping. Amber introduced Becky Engel, contract senior communications manager, and Jay Ward, senior community relations manager.

Jay described the broad categories of entities with which Energy Trust has relationships, beginning with the OPUC and immediately followed by the five utilities. Energy Trust has relationships with state

agencies, nonprofits, local governments, schools and universities. Relationship maps can help identify new relationships to help Energy Trust achieve its goals and deliver greater benefits to ratepayers.

Becky Engel described relationship mapping models, beginning with the power and influence model. This model helps organizations prioritize relationships that provide the most benefit, and it is widely used. Another model is the direct and indirect model, which rates relationships across four categories. This model is not as widely used, but it enables evaluation of more dimensions. Based on these two models, Energy Trust created a radar map to visually depict organizations in regards to eight dimensions that relate to Energy Trust's core goals. Dimensions include program delivery; access to customers; access to undeserved customers, data and insights; policy role impacting energy efficiency and renewable energy; access to resources and connections; industry and technology expertise and leadership; brand leverage and credibility; and data and technology resources. These criteria could evolve as the organization's needs and goals change. Mapping helps Energy Trust identify gaps, blind spots and opportunities. The map illustrates the current state of Energy Trust and potential future state as a result of collaboration with a potential organization.

Jay continued that relationships should be mutually beneficial. Energy Trust is looking for intersection of opportunity by looking at goals, mission, priorities, gaps, resources, potential level of investment, duration of engagement and potential risks. Jay described the relationship continuum also presented in the community engagement board learning topic, which ranges from transactional to integrated.

Amber asked the board for feedback on the eight criteria used to map relationships.

The board responded that the map is a useful tool, and they agree that the eight criteria are useful. The board also noted that the tool is somewhat subjective. The board discussed how Energy Trust would weigh the eight criteria. The board noted that trade allies could be categorized as organizations because they help give access to clients. The board applauded the framework, and noted the value of the tool even though it is necessarily subjective.

Ruchi asked how often organizations would be evaluated, noting that organizations change over time.

The board acknowledged that building relationships requires building trust. Culturally specific organizations highly value trust. The board also noted the importance of culturally sensitive engagement. It would be valuable to vet the maps with other organizations to make sure the maps reflect their needs and interests. Michael reiterated that the next step is to explore common goals, and that is where trust and reciprocity emerges. The board acknowledged that the map serves as an inventory of new opportunities, and building trust and partnership is the next step.

The board asked how Energy Trust might model an entity like the legislature. Jay responded that it would make more sense to model relationships with individual legislators. Amber added that staff have not yet applied this map to existing and potential relationships.

The board noted the importance of growing existing relationships as well as identifying new relationships. This is more useful for existing relationships. The board asked about the process for identifying new relationships.

The board liked how graphs show Energy Trust's influence and opportunities, and how multiple visualizations serve different needs.

The board suggested exploring relationship mapping in 2019.

Efficiency as a Long-Term Resource, Spencer Moersfelder

Spencer Moersfelder described how Energy Trust forecasts energy efficiency resources. A resource assessment provides an estimate of energy efficiency potential that will result in reduced load on a utility system for use in an Integrated Resource Plan. Energy Trust uses a model to estimate energy efficiency resource potential achievable over a 20-year period. It is a bottom-up approach, starting at the measure level and scaling to a service territory. Energy Trust provides 20-year forecasts to utilities for integrated resource plans (IRPs) about every two years. Resource assessment modeling also informs Energy Trust strategic and program planning.

The resource assessment determines technical potential, achievable potential (which is 85 percent of technical potential) and cost-effective achievable potential. The model is based on both measure-level inputs and utility global inputs. Energy Trust applies the cost-effective screen to determine cost-effective achievable potential. Energy Trust uses the Total Resource Cost test (TRC). If the TRC is greater than 1.0, a measure is cost-effective.

The resource assessment model is continuously improved with measure updates, new measures and new emerging technologies. Energy Trust also compares methods for the resource assessment model with the Northwest Power and Conservation Council (NWPPCC) Seventh Power Plan methodologies.

Energy Trust sets a final deployment of cost-effective achievable potential exogenous to the resource assessment model. The deployment is based on Planning and Programs working together to determine the assumed acquisition rate of savings across the forecast period. Recently, we have been more closely aligning our deployment curves with the curves used by the NWPPCC in their Seven Power Plan. Staff use the approved budget numbers for years one and two. Planning and programs work together to forecast for years three to five. Planning forecasts the long-term acquisition rate for years six through 20.

Energy Trust provides savings projections to utilities in gross, not net. Energy Trust tracks its own performance in net savings.

The board is concerned about bottom-up forecasting because it is based on what is known. As the organization projects further in the future, staff will know less and less. There needs to be some element of top down projection. Spencer noted that staff included a megaproject adder to account for large custom industrial projects that Energy Trust cannot anticipate. The challenge is to put together a reliable and defensible forecast for utility IRPs, but still account for some of the uncertainty.

The board asked if there have been studies that indicate the volume of unanticipated savings. Spencer stated that megaprojects and rapid adoption of technology such as LEDs are the two big influencing variables. It's very difficult to predict when the next transformational technologies will arrive.

The board took a break for lunch from 12:00 to 1:05 p.m. During the lunch break, board members, staff and visitors reviewed the 10 Board Learning Topic posters displayed around the room.

Contextual Information on Energy Efficiency and Renewable Energy for Planning

Michael reminded the board that the learning topic papers are available on the Energy Trust website at www.energytrust.org/strategicplan. Over the next year, public documents related to development of the 2020-2024 Strategic Plan will also be located on this web page.

Michael presented information about energy efficiency projections and implications of potential savings related to projected revenue and OPUC performance measures. While the electric efficiency forecast indicates a declining resource potential, there is still a lot of electric efficiency to acquire. Natural gas savings projections continue to indicate high levels of available savings. Michael noted the drop in electric efficiency versus gas efficiency is due to electric market transformation of key technologies.

The board asked what was forecasted in the past and whether it tracks against the forecast curve. Michael noted this year the organization is seeing fewer savings, and especially as LEDs are transformed and no longer a technology that needs Energy Trust support.

The board noted the five-year electric savings goal was originally contemplated to be lower given the forecasts at the time, and in the end the board increased the goal beyond the forecast. Michael agreed with their reasoning at that time. Spencer's presentation didn't speak about timing, yet timing is the most difficult thing to pinpoint. Staff doesn't know when a saturation point or price point will hit, just that it will happen in a certain timeframe. Timing is so important to everything Energy Trust does. Staff has seen the trigger points coming, and now they're happening.

The board asked about cost-effectiveness implications given the forecast. Michael noted Spencer's model factors in cost-effective achievable savings. One analysis conducted by staff looked at expenditures as they stay at a certain level, and with projected savings at a lower level, programs at the portfolio level may not be cost effective. Staff looked at what level of expenditures would be needed to keep programs cost effective. The yellow line of projected expenses is cost effective.

The board noted that in 2020 and 2023, there are similar expenses projected while lower estimated savings, meaning it will cost the same amount to acquire fewer savings.

The board noted cost effectiveness is based on Total Resource Cost (TRC), and asked whether the information displayed is showing that Energy Trust's portion, the cost of delivery, is becoming a larger portion of TRC. Michael confirmed. The board asked if it's the cost of what Energy Trust takes or the overall cost-effectiveness. Michael noted the chart shows net savings, not gross savings for the whole system.

Michael displayed a chart on forecasted expenditures and cost estimates. He noted the chart includes assumptions, such as current levels of funding sources and no adaptive management to manage costs. The slide is shown to indicate the base case.

The board asked whether inflation would increase the public purpose charge since it is a percent of revenue. Michael answered that is not necessarily the case as Energy Trust is funded to the potential energy savings available to acquire. He clarified a degree of carbon pricing is built in as it is included in the various models the utilities use to ultimately develop their utility integrated resource plans (IRPs). IRPs were developed using multiple scenarios, of which, some include a carbon price.

Michael noted the gray line is the 7.75 percent staffing costs performance measure from the OPUC and the yellow line is staffing costs as percent of total expenditures. The yellow line goes up due to

assumptions built into delivery costs. Assuming no adaptive management, the chart indicates Energy Trust could exceed the performance measure in approximately 2021. He said it is important for the board to understand what forecasts are implying for the organization, and asked the board what are some possible ways to respond to this scenario. The board said the information is important to know and understand. The board discussed how Energy Trust could increase savings, reduce costs or ensure costs go further, and not that Energy Trust would need to do so creatively. The board recommended staff reach out to other program administrators to understand how they are working through the same challenge. The board noted the charts also exclude information staff do not yet know, like new technologies and economic growth or contraction.

Michael described future renewable energy generation potential. Unlike energy efficiency, there is not a problem with resource potential. The renewables team manages to its budget, not to the resource potential. Funding is a constraint, not the resource like on efficiency. The renewable energy resource potential is growing. Solar energy systems are getting cheaper. Energy Trust has built a large pipeline of hydropower projects through the irrigation modernization initiative plus biogas projects with municipalities and food processors. The renewables team is a great asset for the organization and the state of Oregon. They have tremendous experience with a range of technologies and over thousands of installed systems.

Michael noted that for the upcoming 2020-2024 Strategic Plan, one of the most important issues for the board to consider is the sunset of SB 1149. Energy efficiency programs can continue past the sunset through the supplemental funding mechanism, which could be used to close the gap left by SB 1149. The renewables funding would sunset as the supplemental funding mechanism is only for efficiency.

Michael listed a series of questions for the board to consider in relation to the sunset of SB 1149, such as when do payments need to be received from renewable energy projects, when are application periods closed, what staffing is needed after the sunset to close out projects with long timelines, and should funds be reserved for any closing costs.

The board noted the state's Renewable Portfolio Standard (RPS) is set to ratchet up over these years. Is there opportunity for utility investments in small-scale renewables? Jed Jorgensen, senior renewables program manager, said the electric utilities subject to RPS are meeting their obligations with projects larger than what Energy Trust supports. He anticipates this trend to continue. The board commented there is potential opportunity with geothermal, particularly in the Klamath Falls area.

Michael concluded his presentation and noted Energy Trust will do what it can to meet the opportunities. His suggestion to the board is to plan for what is known today and manage from there utilizing scenario planning.

Public Comment

No public comments were received.

The board took a break from 1:53 – 2:10 p.m.

OPUC Perspective on the 2020-2024 Timeframe and Strategic Plan Development Process

Jason Eisdorfer, OPUC utility program director, and Elaine Prause, OPUC senior regulatory advisor, presented to the board. Jason acknowledged the upcoming retirements of board members John Reynolds and Dan Enloe, thanking them for their remarkable public service for the state of Oregon.

Jason and Elaine provided OPUC staff perspective on the upcoming 2020-2024 Strategic Plan. They discussed how Energy Trust's core mission supports the energy goals for the state of Oregon.

Jason said strategic planning is about understanding who you are and who you are not. Energy Trust is one of the most effective, if not the most effective, energy-efficiency organizations in the country. Energy Trust is known nationally as an excellent energy-efficiency acquisition entity and the renewables team's expertise is second to none. Jason implored the board not to forget that and to remember Energy Trust's unique value as the board goes forward with strategic planning. Related is the OPUC's expectation of Energy Trust to deliver energy efficiency and small-scale renewable energy as a resource for customers. Energy Trust is taking the place, in a very real way, for what the utilities used to do in the 1990s. Oregon was one of the first states to understand energy efficiency as a resource and Energy Trust stands in those shoes.

Jason provided OPUC staff perspective on what Energy Trust is not. The board shouldn't forget what Energy Trust does well and shouldn't try to do too many things that are not core to the organization's mission. He said having a limited but focused mission is vitally important, not just to the health of the entity but to the role Energy Trust is serving for the commission. There are many groups who would like Energy Trust to do things that it is not currently doing, while others are wanting the organization's money.

Jason continued that as the board launches into strategic planning, it is the job of OPUC staff to give encouragement. Strategic planning includes resource allocation, including how staff is managed and how the OPUC oversees staffing performance measures. He noted Energy Trust should make sure its stakeholders are coming along with its decisions.

Jason detailed the OPUC's perspective. The OPUC is not a key stakeholder and is a partner with Energy Trust. The history of Energy Trust is entwined with the OPUC itself. In 1999, commissioners Ron Eachus, Roger Hamilton and John Smith kicked off the process that resulted in Energy Trust. That vision launched Energy Trust. In the 1990s, there was a reduction in focus on energy efficiency from the electric utilities specifically due to deregulation on the horizon. There was a natural conflict with the utilities to help customers use less of their product. The approach was to create a third-party, nongovernmental entity unencumbered of that interest, blessed with stable funding and working across multiple utility territories. Jason said looking back at 1999, imagining what Energy Trust would be, the result thus far has exceeded his wildest imagination.

Jason said that while things are changing and Energy Trust must adapt, the fundamental ground rules and expectations have not changed. There are challenges, but who best to work through them if not Energy Trust. He said the board and organization needs to remember its core activities. As savings get harder to acquire, the OPUC is relying on Energy Trust to work out those challenges.

Elaine noted that embarking on a strategic plan is a good time to step back and consider where the organization fits in with Oregon's future. Elaine showed three charts. The first was a Northwest Power and Conservation Council chart from the Seventh Power Plan, which shows energy efficiency as the primary, new energy resource. The green in the chart isn't all Energy Trust, as the power plan is a

regional plan, but the emphasis is on efficiency as the first resource. Elaine noted the second resource is demand response and is needed to address capacity needs in the region.

Elaine showed a second chart from the Oregon Global Warming Commission's 2015 report. Energy efficiency and renewable energy are within the wedge analysis. The state of Oregon is relying on energy efficiency and renewable energy to play a major role in reducing carbon emissions in the future.

Elaine showed the third of three charts, which was from PGE's decarbonization study conducted by Evolved Energy Research. E3 did a similar study for the state of California. The goal of the studies is to show how states can reduce the carbon intensity of the whole energy system. A common theme is energy efficiency is the first pillar of action and is then followed by renewable energy.

Summarizing the charts, Elaine noted energy efficiency and renewable energy success is being counted on. Jason said these two resources aren't going away, they are getting more important to acquire. He noted that if the state legislature were to pass a cap and trade policy, there would be impacts on the market, which may change cost-effectiveness to a degree.

Jason said SB 1149 is expiring in 2026. As the board looks at future changes and risks, the sunset is a risk, but it is a conversation with stakeholders, the OPUC and Energy Trust about matching the state's energy policies and goals with the specific language of the law.

Jason said energy efficiency is an evolving energy resource. With the decline in LEDs and the overall dip in energy efficiency resource, it leads to questions about managing around such an event. This led to controls like new performance measures. First, don't panic when there is a dip in savings. Energy Trust is still acquiring all cost-effective energy efficiency that ratepayers are depending on. To the extent the resource is changing, Energy Trust will have to change, too. And Energy Trust has been doing this. Secondly, the OPUC is going to work with Energy Trust as a partner. To the extent that existing performance measures are no longer reflective of what it takes to deliver a cost-effective resource, the OPUC wants to work with Energy Trust to figure out what those metrics are, and if needed, changes to think about different ways to approach cost-effectiveness needs. The OPUC needs clear communication with Energy Trust and to be brought along. Third, OPUC staff is challenging the energy efficiency forecast. OPUC staff are challenging Energy Trust to dig into the forecast. The more Energy Trust pushes to innovate and be creative, the more successful it will be with the state's goals and the region's goals.

Jason said that as the board goes through the strategic planning process, it must look forward to change that is coming, must adapt and might have to rethink how the organization does things or thinks about new things to do. On one hand, this is very appropriate. On another, it makes the OPUC unsettled. The OPUC relies on Energy Trust to acquire an energy resource. As new opportunities arise that have potential value, OPUC staff want to know. Jason cautioned the board about moving into spaces that are competitive, as Energy Trust is not a competitor. As the organization looks at new opportunities, make sure the role is suitable. When pursuing a wholly new activity, ensure the organization still delivers energy efficiency. Any new activity doesn't excuse the organization from the issues Michael discussed earlier in the workshop. Energy Trust still has to figure out cost-effectiveness and forecasting. If Energy Trust takes on activities that distract from its core mission that is simply something the commission is not interested in. Anything new needs to be additive and cannot detract from the core mission. Jason noted Energy Trust can look at new opportunities as within the ratepayer-funded mission or with new funding. Opportunities might emerge from the SB 978 process. The OPUC

is currently working with Energy Trust staff on developing a set of criteria to be an appropriate screen for new opportunities. For instance, if an opportunity includes additional focus on reaching customers who have yet to be served, that is appropriate. Looking at what's changing and not changing in the next five years is appropriate. The organization needs to figure out how it will adapt to those changes.

In regards to the OPUC's oversight of Energy Trust, Jason said they are willing to modify and adapt as challenges come up and to have Energy Trust staff continue working with them on appropriate metrics.

Jason acknowledged that the world is changing. It is precisely that Energy Trust has been so successful that it has made the future more difficult. Energy Trust is known nationally for figuring this out. Jason said to make sure the bright and shiny object is what Energy Trust is currently delivering. Energy Trust is the envy of states around the country. To the extent you need to make adjustments, the OPUC is here to help and is a partner.

The board noted it is very helpful to hear the OPUC's expectations of Energy Trust. The board questioned whether the total resource cost test could be changed. Also, current legislation and the grant agreement gives Energy Trust responsibility for conservation, not for energy efficiency, which could be inclusive of demand response. Jason noted there is a docket on avoided costs. The total resource cost test is part and parcel of making sure that customers who are paying for services Energy Trust delivers get them as an investment in the system. There are restrictions on cost-effectiveness that the OPUC won't remove, though it doesn't mean they may not evolve. Jason said he still thinks the avoided cost methodology the commission uses in the exception process is worth a lot. Also, note that the OPUC has also been asking similar questions around language and what conservation and efficiency mean.

The board also commented on the appropriateness of faith-based planning, in terms of allowing the sunset of SB 1149 to be worked out by stakeholders or through separate processes. Energy Trust is not a lobbying entity. It has distance from the legislature that makes it difficult to set out a plan, especially with small-scale renewable resources. How should the board plan for this in its strategic planning? Jason said the prohibition on lobbying won't change but that Energy Trust will be a part of the conversation. Distributed generation, storage and demand response are all areas that fall outside of SB 1149. Some of them may be areas where Energy Trust doesn't belong or where Energy Trust could be enormously helpful. Energy Trust will be a part of those conversations.

Energy Trust Strengths/Role of Value: Small Group Discussions

Holly Valkama described the small group exercise. Board members, staff and participating members of the public are to think through how they would state Energy Trust's unique role of value. What does Energy Trust uniquely deliver as a sustainable value into the market it serves, who does Energy Trust serve in the market and how does it define that market. Is Energy Trust the best organization to play that role? Where is Energy Trust best positioned to deliver services and where is it uniquely set up to do that versus others? Part of what gets the organization there are Energy Trust's strength. What are those competitive strengths?

The board, staff and audience broke into five tables to explore the following questions:

- What is Energy Trust's unique role of value today?
- What are Energy Trust's competitive strengths?
- What does Energy Trust do better than all or most organizations?

During the report outs, tables were asked to not repeat what others stated, if possible.

Table 1 reported out on Energy Trust's unique role of value, which includes delivering direct value to ratepayers to reduce costs by delivery of programs, infrastructure, systems, world-class staff, expertise, customer relationships and innovating and developing new markets. To support this, Energy Trust is transparent, has a clear mission and focus, has a developed network, has expertise in planning and market analysis, holds strong stakeholder relationships and has a recognizable brand. The organization's indirect value is that it delivers economic and environmental benefits, and it also creates data and information, making it available to the public through evaluations.

Table 2 reported out on Energy Trust's unique role of value and competitive advantage, which comes from a world-class, recognized staff. Energy Trust's staff has longevity, history and institutional knowledge that make the organization responsive to market variability and able to think creatively and strategically. Staff is well-networked in the industry, regionally and nationally, and is able to tap into other ideas externally. Staff have passion around the goals and the mission of the organization and are very engaged to find solutions. Energy Trust has also been acquiring cost-effective energy resources for customers year after year. The organization is able to predict and then meet or exceed goals. Energy Trust has a unique model, and by serving all utilities, can provide a stronger brand and more clarity for customers. There is no conflict of interest between delivering more product and delivering energy efficiency. Energy Trust also does not have to compete for resources against other nonprofits, and this makes it easier to focus on the mission. Finally, transparency and measuring success is another area of unique role of value, aided by clear metrics set by the OPUC.

Table 3 reported out on Energy Trust's unique role of value, which includes providing incentives for behavior change, objectivity, an ability to be focused on energy efficiency and renewable energy, and staying neutral around fuel choice. Energy Trust's competitive strengths are a bridge between policy and customers, and the organization has adaptable and modern IT infrastructure that allows it to integrate new opportunities.

Table 4 reported out on Energy Trust's unique role of value, which included the ability to get better results than utilities do out of the same contractors. The table attributed this to Energy Trust's priorities, clear scope, portfolio approach, and evaluation and adaptation.

Table 5 reported out on Energy Trust's unique role of value and competitive strengths. Energy Trust does not have a conflicted focus and doesn't need to take a profit. Energy Trust has a combination of trust, expertise, experience and neutrality. Together these elements make the organization effective relative to other implementers. Energy Trust serves a variety of customers, geographies and customer classes.

The board, staff and public commented on the exercise. The comment about program management contractors and how Energy Trust is able to get more from them than utilities was interesting. Mining this will help the organization identify what is unique about itself as well as examine the role of in-house versus externally delivered programs. Reputation and brand came up in multiple groups, and is widespread. It was noted Energy Trust should focus more on education and knowledge-building as an asset. Energy Trust also has unique long-term freedom. The organization can negotiate five-year contracts while other state don't go longer than three years. Longer-term relationship building really matters, especially for projects that take multiple years to complete.

Holly hosted a conversation about what has been spurred by the “unique role of value” conversation that the board wants to think about when considering the next strategic planning period. What “role of value” does the board want to focus on?

The board noted it still struggles with forecasting the available resource and knowing that there are unknowns. Is there a methodology for inserting some unknown resource? How does the board make goals that are aggressive and include some things that are not known?

Holly asked the board to look forward to the next strategic plan. Based on what they have heard, what would the board like to see in that plan?

The board discussed incorporating resiliency in the vision. For example, all houses and buildings with solar and maybe storage installed. If there was a Cascadia subduction event, utilities will need time to rebuild and Energy Trust would be there to supply efficiency, renewables and storage in a distributed fashion. The phrase could be “resiliency in all areas of homes, businesses and government.”

The board talked about ways the unique roles of value and strengths mentioned today could be marketed and applied by the organization. Given Energy Trust’s strengths, could it work with other utilities to cover all of Oregon? They have energy efficiency goals, too. The board discussed risk in becoming too complacent, whether achieving goals or planning around the SB 1149 sunset.

Holly Braun, NW Natural, said Portland has a requirement that all homes listed for sale get a home energy score. Is there a way to apply that across the state? If everyone is incented to get a score and develop a long-term plan, that would put everyone on a path to efficiency. This would be an example of leveraging a best practice, a home score.

Fred Gordon, direction of planning and evaluation, noted that Energy Trust has proven that, from a state perspective, the organization has a track record of lean operation and consistent high performance. How does the organization position itself so that whatever legislature and regulatory process develops, it is positioned to be the delivery mechanism?

Lisa McGarity, Avista, talked about expanding complimentary services, such as water conservation or other types of services, into complimentary markets.

Michael noted that he would like to explore how to get Energy Trust’s stakeholders to recognize Energy Trust’s trust, expertise, experience and neutrality so that Energy Trust is not a target.

Closing Conversation

Holly described the board’s assignment to prepare for the second day of the workshop. The board members should think about what they want the process of building the strategic plan to address or answer. The Strategic Planning Committee wants to make sure the process also answers questions board members have about the organization.

The board commented on the productive day. Board members discussed thinking about resiliency in terms of an off-grid situation, solar and storage, microgrids and other dimensions that are new.

The board adjourned at 4:45 p.m.

Board Meeting Minutes—Annual Board Strategic Planning Workshop

May 18, 2018

Board members present: Susan Brodahl, Dan Enloe, Roger Hamilton, Lindsey Hardy, Mark Kendall, Debbie Kitchin, Alan Meyer, John Reynolds, Anne Root, Eddie Sherman, Steve Bloom (Oregon Public Utility Commission ex officio), Ruchi Sadhir (Oregon Department of Energy)

Board members absent: Melissa Cribbins, Janine Benner (Oregon Department of Energy ex officio)

Staff attending: Scott Clark, Amber Cole, Michael Colgrove, Sue Fletcher, Fred Gordon, Steve Lacey, Debbie Menashe, Becky Rein, Greg Stokes, Julianne Thacher, John Volkman, Peter West

Others attending: Anne Snyder Grassman (Portland General Electric), Rick Hodges (NW Natural), Elaine Prause (OPUC), Holly Braun (NW Natural), Lisa McGarity (Avista), Jason Eisdorfer (OPUC), Tammy Louford (NW Natural), Mathew Doyle (NW Natural), Bill Edmonds (NW Natural), John Charles (Cascade Policy Institute)

Board Discussion: Beginning the Energy Trust 2020-2024 Strategic Planning Process

Holly opened the meeting at 8:06 a.m. The agenda today is to set goals.

The board discussed setting goals for Energy Trust's 2015-2019 Strategic Plan. What is the size of available efficiency, and how much of that could Energy Trust achieve? The board considered consequences of failing to meet goals. The board preferred dynamic goals appropriate for the market and policy climate that Energy Trust operates in.

The board discussed a potential partnership with Oregon Economic Development Association, utilities and others to help incent companies to locate in Oregon.

The board discussed the staff engagement metric, which could be new or different.

Ruchi reiterated that Energy Trust should be sufficiently dynamic to respond to policy dynamics while also maintaining Energy Trust's core work.

The board discussed diversity, equity and inclusion metrics in the next strategic plan, and asked about current diversity, equity and inclusion metrics.

The board would like to see the next set of goals incorporate insights from Energy Trust's next management audit. That could include looking at how diversity, equity and inclusion is integrated into program decision making.

The board discussed the importance of behavioral offerings, which are an important part of energy efficiency. In a big earthquake, resilience will depend on people using less and doing more with what they have. That's behavioral. On the other hand, more behavioral offerings could pose a marketing challenge because people don't like to be told what to do.

The board noted that Energy Trust has an opportunity with data. Can Energy Trust do more with data as a resource and product for other entities?

If Energy Trust wants a bigger percentage of the available efficiency, it needs to know where it is not getting savings and why. Who is underserved and why? How does Energy Trust get to renters and low- and moderate-income customers who could benefit from energy efficiency and renewable energy but are struggling to make ends meet in Oregon right now?

What is Energy Trust's role in education? Do we have a broader education goal? Steve responded that Energy Trust needs to educate and increase awareness of Energy Trust. Energy bills don't say Energy Trust—they say public purpose charge. People who do not directly participate in Energy Trust don't know that it exists, what it offers and how it benefits people. There's an opportunity to educate people about resilience. Resilience may appeal to people who are not interested in conservation. Natural disasters are a good news hook.

Energy Trust has great advertising on TV and the marketing department is strong, but funds are limited. If they have more budget, they can do more marketing. The board discussed public relations as an alternative to marketing and noted that public relations also requires financial resources. Ruchi added that partnerships are a good way to increase awareness, such as having the Oregon Department of Energy refer people inquiring about tax credits to go to Energy Trust.

The board would like to see the strategic plan address specific, actionable and measurable goals and objectives.

The board is interested in understanding how Energy Trust is marketing to diverse customers in culturally sensitive ways, such as by translating materials. Energy Trust has done studies to understand how people around the state learn about Energy Trust. Energy Trust needs to better understand spillover.

The board noted that many organizations are values-driven. How does Energy Trust educate stakeholders about its values? How does Energy Trust change behavior in ways that resonates with different audiences, such as protecting the environment, preserving resources and developing a more sustainable society? Holly described values as internal, but they are also connected to external perception. What is the consistent and enduring perception that people have when they interact with Energy Trust? The board acknowledged that organizational values drive an organization's brand and reputation. Values questions are important and will directly impact Energy Trust's brand and value to the community. Community-based organizations want to know if Energy Trust shares their values. The board affirmed that Energy Trust's reputation must be authentic and based on its core values.

The board discussed the "those we serve" section of Energy Trust's mission. How does Energy Trust quantify its value to people beyond direct participants? For example, in Bend, the local utility got so many calls in response to Energy Trust's promotions that they began offering free efficient light bulbs.

Role of Scenarios in Energy Trust Strategic Planning

Michael introduced several scenarios for the strategic plan. Energy Trust doesn't have sufficient resources to plan for every possible scenario, so it needs to select a likely path and then be prepared to make changes as needed. Staff want board thinking about the future landscape to inform this scenario development. Michael asked the board to focus on three key drivers: policy and regulatory environment, efficiency potential, and workforce and talent.

The first driver is efficiency potential as forecast in Integrated Resource Plans. This is the X axis and will be used as a baseline. This could be influenced by factors such as cost of energy or changes to the economy.

The next driver is policy and regulatory environment. If the policy and regulatory environment stays the same, Energy Trust will be at zero.

The board discussed what it would mean for the policy and regulatory environment to stay the same, and decided it means that SB 1149 funding would be maintained past the sunset date and there would be no big codes and standards changes. Changes could include a cap and trade policy, tax on fuels imports and changes to federal policy. Another change could be extending Energy Trust's measures to include batteries or other new technologies.

Michael described potential policy scenarios, including sunset of SB 1149 funding or increased locational value attributed to energy efficiency. These factors would move Energy Trust up and down the policy and regulatory environment Y axis.

The Z axis is workforce and talent. This could include trade allies.

Michael continued that this tool will be used to map the influence of drivers on Energy Trust's base case. As part of strategic planning, Energy Trust should ask if it can influence any of these factors. Energy Trust doesn't have influence over the policy and regulatory environment, little influence over efficiency potential, and no influence over workforce and talent.

The first scenario is the efficiency potential base case shared yesterday, which includes no changes to policy and regulatory environment and no changes to workforce and talent. Scenario two is a more beneficial policy and regulatory environment, more efficiency potential and more workforce and talent. The third scenario is for efficiency potential to decrease (such as due to economic downturn), a less favorable policy and regulatory environment (such as through sunset of SB 1149), and no changes to the talent pool. The purpose of these scenarios is to understand if Energy Trust can achieve goals under different sets of circumstances.

Energy Trust's current organizational review project team is tasked with assessing the organization's processes and structures and to make recommendations to ensure that the organization is flexible and dynamic. This is to help Energy Trust adapt to an uncertain future. The board will see those recommendations along with the budget process recommendations at the June board meeting.

The board asked about the potential impact of the workforce and talent dimension. Policy and efficiency potential could have a huge impact on Energy Trust, but workforce and talent seems to have a less clear influence. How much of a constraint is workforce and talent on Energy Trust's ability to meet goals? Workforce also includes market and trade ally workforce. The organization needs pick which drivers will have the biggest impact.

The board observed that Energy Trust has three goals in the strategic plan regarding energy: electricity savings, gas savings and renewable generation. Should the strategic plan start with those numbers first and then rely on staff to figure out how to achieve them. Does Energy Trust need to establish quantitative goals? Should goals be determined before or after scenarios are evaluated? Holly suggested an iterative process that include consideration of environmental factors.

The board returned to discussion of the workforce and talent access, noting that an economic recession could result in more available labor. The board suggested Energy Trust consider financing programs at community colleges to build up potential trade ally workforce.

Holly responded to the question about potential impact on workforce and talent, and asked if there other dimensions the board thinks could have a greater impact on Energy Trust.

The board noted Energy Trust should rely on intelligence from partners in the market. The board also suggested Energy Trust should pay attention to and anticipate policy changes in advance. There are things staff can't predict, but the organization needs to be prepared to respond.

Michael responded that all drivers are predictions and none are certain. When we talk about all possible drivers, the question is which scenarios the next strategic plan should address. That's a matter of deciding which scenarios are most likely to happen. The board asked about natural disasters and cyberattacks as potential drivers. Michael responded that Energy Trust may not be the best entity to address a scenario like natural disasters. If Energy Trust has a minor role in planning for an unlikely event, how much time should Energy Trust spend planning for that? Holly added that the job of the strategic plan is to decide what Energy Trust should focus on. Through the strategic planning process, the board will also identify indicators that prompt a re-evaluation of the plan.

The board commented that Energy Trust needs to determine both the size of the energy savings potential and its ability to capture that potential. Regulatory and policy could influence both the potential and Energy Trust's ability to influence that potential. Workforce is one component of the organization's ability to influence that potential, but a broader category is needed.

Ruchi observed that many organizations are working on resilience, and gaps could be filled by better coordination. There is a relationship between policy and regulatory and workforce because there's a greater emphasis on the next state budget on workshop development support.

The board asked if fuel pricing is included in the regulatory environment. Michael responded that fuel pricing is included in the regulatory and policy access and in IRPs. Should fuel costs be added as a driver because they have a large impact on Energy Trust?

The board brought up local government interest and engagement as a factor of influence. More communities are developing sustainability plans. Sustainability, resilience and energy are all interwoven into community planning, and Energy Trust could do more community engagement regarding these plans.

The board suggested other important drivers, including the economy and demographic trends, and noted that the federal regulatory and policy environment is very difficult to predict.

Holly asked if the board wants to test any boundaries as it develops its next strategic plan. The board asked if the plan should assume that Energy Trust will be funded through the public purpose charge or through new, additional funding sources, and Holly responded that this is an example of a boundary that the board needs to determine.

The board acknowledged that 25 percent of Oregon ratepayers are not customers of Energy Trust. They are free riders who benefit from Energy Trust. Energy Trust could quantify or describe the benefit to these non-Energy Trust customers. Holly asked if the board wants to expand Energy Trust's geographic boundaries, and the board noted Energy Trust already serves customers in Washington. Michael explained that Energy Trust's contract with NW Natural to serve Southwest Washington customers is renewed annually.

The board clarified that the OPUC has no jurisdiction over the public utility districts and municipal utility districts. Those programs contract with Bonneville Power Administration to deliver energy efficiency programs. Idaho Power is the only investor-owned utility that Energy Trust does not serve, and there are very few Idaho Power customers in Eastern Oregon. The board wondered if Energy Trust would need permission from the OPUC to serve other territories, and noted that in the past the OPUC has been concerned about diluting Energy Trust's focus on Oregon ratepayers. Funding for other new locations would need to come from a non-public purpose charge source. Should Energy Trust start fundraising to build up seed funding for new efforts?

The board is interested in exploring boundaries regarding geographic service area, but does not want to test them right away. Energy Trust should investigate the boundaries in its grant agreement. There may be opportunities that have not been fully explored. The board appreciated Jason Eisdorfer's guidance that Energy Trust should focus on its strengths. Steve added that there are potential risks to Energy Trust exploring new funding sources. Ruchi agreed that Energy Trust should be cautious, and suggested that current work in Washington could be used as a successful model of serving new territory. If Energy Trust can serve more customers, including underserved communities that are already paying public purpose charge, Energy Trust should focus on that rather than expanding geographic reach. Steve added that Energy Trust should communicate more with the legislature to make sure legislators understand the organization's mission, achievement and benefits.

The board asked how Energy Trust should leverage relationships with partners in the marketplace, noting that Energy Trust has a well-developed network of trade allies and local governments. How does the organization strategically leverage those relationships to give us deeper and wider reach? Steve has been impressed with the engagement of trade allies and local businesses.

The board suggested that one scenario should pessimistic forecast and predict a decline in funding, and encouraged exploring partnerships with public and municipal utility districts. Steve cautioned that it will be difficult to partners with these entities. Michael noted that Energy Trust could make public and municipal utility districts aware that they could hire Energy Trust to run their energy efficiency programs.

The board asked about the impact of helping customers disconnect from the power grid, noting that it reduces the number of utility ratepayers.

Michael continued that there are significant potential challenges ahead, such as the sunset of SB 1149. What other boundaries are there regarding policy changes? Energy Trust should also think about boundaries of our core mission.

The board reiterated that there are many more emerging behavioral energy efficiency opportunities. If resource potential is going to diminish, Energy Trust should not assume it needs fewer staff. More staff would be needed to achieve harder-to-acquire energy efficiency resources. Even if Energy Trust

acquires savings that are outside of the cost-effective threshold, efficiency would still be less costly than other sources of energy.

The board restated that Energy Trust's mission says "to those we serve." Should the board start by establishing who Energy Trust serves? There are two ways to read that statement, as eligible participants and direct participants. There are benefits for everybody. Ruchi agreed that Energy Trust's work provides benefits in addition to direct program delivery. For example, Energy Trust's data and analysis is a resource for other agencies. This offers benefit and value to customers outside of investor-owned utility jurisdictions.

Should Energy Trust target efforts to customers that are willing to invest in energy savings rather than convincing people who are not already interested? Michael responded that this question is relevant to our locational load management work. Should Energy Trust focus on areas where the need is greatest? Energy Trust should pursue energy savings for all customers regardless of income.

Public Comment

Eddie returned to the meeting at 10:05 a.m.

Holly invited public comment.

Holly Braun, NW Natural, appreciated the comment about partnering with organizations for marketing. I encourage Energy Trust to consider utilities as its strongest marketing partners. Customers need to understand that there are incentives and services for energy efficiency. It's not as important that they know about Energy Trust. It's remiss to spend marketing money to increase awareness of Energy Trust. Customers should know to work with their utilities to access energy efficiency. The board agreed that Energy Trust could do more cobranded marketing with utilities.

Lisa McGarity, Avista, added its most important is helping customers see the value of energy savings. Energy Trust should go after laggards and understand why they aren't participating. For Avista, conservation programs are a positive and valuable connection point with customers. Lisa suggested Energy Trust focus marketing on communicating the benefit for customers and participants. What's in it for them?

The board asked Lisa if she thinks there's more resource potential from customers, and noted that human motivation could be an axis of influence. Lisa responded that IRPs don't take into account human motivations.

John Charles, Cascade Policy Institute, observed that biannual PPC reports are not widely read by legislators. They show the energy savings and where the PPC money went. If you take all of the claimed benefits and divide it by the money spent, there has been a steady decline in benefit cost ratios across all programs and all administrators. The biggest decline has been with Energy Trust. The benefit cost ratio for Energy Trust is now barely above one. John does not think it's productive to speculate about extension of SB 1149. You should assume that the SB 1149 sunset will take place, not assume it will be extended. Some legislators might think that the PPC should sunset sooner. Energy Trust has accomplished its work already. You should control what you can—reducing costs and increasing benefits. John also noted that Energy Trust is a nonprofit and nothing prohibits the organization from fundraising to generate another less constrained revenue stream. For now, Energy Trust should focus on its mission. The board responded that Energy Trust is exploring alternative funding strategies, and

noted that there are many non-quantifiable energy efficiency benefits. A numerical cost benefit analysis doesn't adequately portray all of benefits. The board thanked John for his continued attention to Energy Trust.

Anne Snyder-Grassman, PGE, suggest Energy Trust keep energy efficiency, participation and decarbonization in mind as it develops its next strategic plan. Energy Trust should market to repeat customers, and should keep in mind that utilities are partners and can help Energy Trust achieve goals and reach new customers. The board asked Anne about the success of loans for energy efficiency projects paid back through utility bills on-bill financing. PGE has concerns about on-bill financing for low-income customers because it adds to debt. Holly added that NW Natural has more customers dropping off and repaying loans than are signing up, so over time there are fewer and fewer on-bill financing customers.

The board took a break from 10:20 to 10:40 a.m.

Proposed Timeline and Process Plan for 2020-2024 Strategic Plan Development

Roger called the meeting to order and acknowledge John and Dan as retiring board members. Eddie shared a practice of awarding recognition to community members that support Native American communities. Eddie brought necklaces for Dan and John to thank them for their contributions.

Mark introduced Debbie Menashe to share the timeline and next steps for the 2020-2024 Strategic Plan. By May 2018, Energy Trust should have a draft plan available for stakeholders to review and provide input. Debbie explained that the board will debrief after this workshop at its June board meeting. Staff will develop a detailed Strategic Plan schedule in summer 2018, and will share it with the board at the October 2018 board meeting. Staff will iterate with the board in winter and spring of 2019 to arrive at a draft plan in May 2019. There will be a long legislative session in 2019, which will provide more information about drivers.

Mark added that the Strategic Plan Committee will have a more detailed work plan to share with the board in summer and fall, including stakeholder outreach. The board supports engaging Conservation Advisory Council and Renewable Energy Advisory Council early in the process so they can provide substantive input that can be incorporate into the plan. The work plan should also include specific engagement opportunities for the OPUC and the utilities. The board asked if the schedule allows for enough discussion and consultation with stakeholders.

The board acknowledged Oregon Department of Energy's contributions to this workshop, and wants to ensure the strategic plan synchronizes with the upcoming Oregon Department of Energy state energy plan.

The board liked the axis strategic scenario planning, and suggested Energy Trust stretch to reach the limits of capability. The board made suggestions to improve the readability of the graph indicating drivers.

The board asked when the board will narrow the considerations suggested today. The strategic planning committee will debrief and unpack this content at its next meeting, and will bring distilled, organized and prioritized content back to the board in June.

Summary of Big Takeaways and Next Steps

John Volkman, general counsel, summarized key takeaways from the board workshop.

Yesterday, board members expressed that one of Energy Trust's value is its clarity and focus. Another value is the talent of Energy Trust staff. Another strength of Energy Trust is it doesn't have to spend time on fundraising. Yesterday the OPUC reminded the board that the OPUC and Oregon Department of Energy are pioneers and champions of energy conservation and demand-side management, and they are pleased to see Energy Trust's success at meeting its goals. The task of strategic planning is to balance those factors—continuing to do what's made us successful and also adapting to a new world with different technologies, resources and industry. Planning for uncertainty is key to strategic plan.

Today, board members expressed desire for specific and clear goals. Goals should continue to be ambitious, and they should work in an uncertain environment. The strategic plan should provide clarity about Energy Trust's role in education about energy efficiency and increasing awareness of Energy Trust. The strategic plan should talk about how Energy Trust interacts with different communities and cultures. The board did not have objections to the concept of scenario planning. Energy efficiency resource and policy drivers resonate with the board, and the board is less sure of how or if workforce is a key driver. The board did not suggest Energy Trust stray too far from its core mission. The board wants to know how Energy Trust is reaching different communities and if not, why not. Ruchi mentioned that Energy Trust's NW Natural Washington contracting model might be a paradigm that could be used for other kinds of work Energy Trust could do. Was there anything else critical?

Ruchi asked about the process in scenario planning for identifying and tracking key drivers, especially on the policy axis. That could be a large scope of work. Michael asked Holly how important it is to know the details beneath the net impact of key drivers. Holly responded that the organization needs to understand the descriptors for each scenario. Descriptors will help Energy Trust define its role and will inform strategies.

The board likes the scenario concept but doesn't want to explore too many scenarios. Energy Trust could describe the worst and best case scenario, or it could define multiple scenarios. Holly responded that most organizations identify a most likely scenario, and then consider less likely scenarios to determine which scenarios pose high enough risk that some degree of planning is necessary. For example, a big earthquake isn't Energy Trust's focus, but it's such a disruptive event that a strategy is needed in case it occurs.

The board added that discussion included high-priority takeaways for 2019, such as exploring use of the mapping relationships tool. Michael responded that staff are keeping a list of initiative ideas. On Tuesday, Management Team will look at initiative ideas surfaced by board and staff and prioritize them. This is the beginning of the business planning process. An initial prioritized list will be presented at the July board meeting in Klamath Falls.

The board wanted to ensure that the ideas surfaced will live on and not be shelved. Amber noted that staff will explore educational opportunities. Michael added that these ideas will go into the strategic plan and will also go into the new board member orientation and new staff orientation.

The board appreciated the board learning topics and posters, noting they provide a unified set of definitions for conversation, and requested they be available during all board meetings.

Closing Comments

Roger appreciated the active participation of board members in this retreat. Mark appreciated the work of staff. Michael thanked board members for engagement and staff for all of the preparation. Michael thanked Dan and John for their service and contributions to Energy Trust.

The board adjourned at 11:26 a.m.

Mark Kendall, Secretary

PINK PAPER

Board Meeting Minutes—158th Meeting

June 6, 2018

Board members present: Susan Brodahl, Melissa Cribbins (phone), Roger Hamilton, Lindsey Hardy, Mark Kendall, Debbie Kitchin, Alan Meyer, Anne Root, Steve Bloom (Oregon Public Utility Commission ex officio), Janine Benner (Oregon Department of Energy ex officio)

Board members absent: Eddie Sherman, Ernesto Fonseca

Staff attending: Amber Cole, Michael Colgrove, Steve Lacey, Debbie Menashe, Julianne Thacher, Becky Rein, Pati Presnail, Hannah Cruz, Art Sousa, Greg Stokes, Mike Bailey, Andy Eiden, Amanda Sales, Scott Clark, Betsy Kauffman, Sarah Castor, Andy Griguhn, Scott Leonard, Kate Scott, Andrew Shephard, Mark Wyman, Dave Moldal, Marshall Johnson, Ryan Crews, Oliver Kesting, Thad Roth, Andy Hudson, Amanda Potter, Jed Jorgensen, Ericka Kocielek, John Volkman, Tara Crookshank, Lily Xu, Peter Shaeffer

Others attending: Brendan McCarthy (Portland General Electric), Rick Hodges (NW Natural), Kari Greer (Pacific Power), Nicole Lynch (CLEAResult), Julie O'Shea (Farmers Conservation Alliance), David Wynde (Wynde Consulting), Jeff Manternach (Red Rock Biofuels), Jue Zhao (City of Salem), Ben Haney-Senior Project Manager, (City of Salem), Keith Kuenzi (City of Salem), Zach Snyder (public)

Business Meeting

Roger Hamilton called the meeting to order at 9:33 a.m. and asked for changes to the agenda. There were none.

General Public Comments

The president may defer specific public comment to the appropriate agenda topic. There were no public comments.

Consent Agenda

The consent agenda may be approved by a single motion, second and vote of the board. Any item on the consent agenda will be moved to the regular agenda upon the request from any member of the board.

The board noted Anne Root should be added to the Policy Committee roster.

MOTION: Approve consent agenda

Consent agenda includes:

1. April 4, 2018, board meeting minutes
2. Committee assignments—R837

**RESOLUTION 837
BOARD COMMITTEE APPOINTMENTS
(SUPERSEDES RESOLUTION 833)**

WHEREAS:

1. Energy Trust of Oregon, Inc. Board of Directors are authorized to appoint by resolution committees to carry out the Board's business.
2. The Board President has nominated new directors to serve on the following committees.

It is therefore RESOLVED:

1. This resolution supersedes Resolution 833, adopted by the board at its February 22, 2018, meeting.
2. That the Board of Directors hereby appoints the following directors to the following committees for terms that will continue until a subsequent resolution changing committee appointments is adopted:

Audit Committee
Anne Root, Chair
Melissa Cribbins
Mark Kendall
Karen Ward, outside expert
Roger Hamilton (<i>ex officio</i>)
Pati Presnail, staff liaison
Board Nominating Committee
Debbie Kitchin, Chair
Alan Meyer
Anne Root
Eddie Sherman
Steve Bloom, OPUC (<i>ex officio</i>)
Roger Hamilton (<i>ex officio</i>)
Greg Stokes, staff liaison
Compensation Committee (formerly 401(k) Committee)
TBD, Chair
Melissa Cribbins
Mark Kendall
Roger Hamilton (<i>ex officio</i>)
Debbie Goldberg Menashe, staff liaison
Executive Director Review Committee
Melissa Cribbins, Chair
Debbie Kitchin
Roger Hamilton (<i>ex officio</i>)
Finance Committee
Susan Brodahl, Chair
Ernesto Fonseca
Debbie Kitchin
Anne Root
Roger Hamilton (<i>ex officio</i>)
Pati Presnail, staff liaison
Policy Committee
Alan Meyer, Chair
Ernesto Fonseca
Eddie Sherman
Elaine Prause (<i>ex officio</i>)
Roger Hamilton (<i>ex officio</i>)
Debbie Goldberg Menashe, staff liaison
Program Evaluation Committee
Lindsey Hardy, Chair
Susan Brodahl
Alan Meyer

Ken Keating, expert outside reviewer
Jennifer Light, expert outside reviewer
Dulane Moran, expert outside reviewer
Jamie Woods, expert outside reviewer
Warren Cook (<i>ex officio</i>)
Roger Hamilton (<i>ex officio</i>)
Sarah Castor, staff liaison
Strategic Planning Committee
Mark Kendall, Chair
Susan Brodahl
Lindsey Hardy
Janine Benner, ODOE (<i>ex officio</i>)
Elaine Prause, OPUC (<i>ex officio</i>)
Roger Hamilton (<i>ex officio</i>)
Debbie Goldberg Menashe, staff liaison

3. **The executive director, general counsel, or chief financial officer are authorized to sign routine 401(k) administrative documents on behalf of the board, or other documents if authorized by the Compensation Committee.**
4. **The board also acknowledges that the following board members have committed to attend advisory council meetings:**
 - a. **Conservation Advisory Council: Lindsey Hardy and Alan Meyer**
 - b. **Renewable Energy Advisory Council: Alan Meyer and Ernesto Fonseca**

Moved by: Anne Root
 Vote: In favor: 7
 Opposed: 0

Seconded by: Debbie Kitchin
 Abstained: 0

President’s Report

Roger Hamilton discussed a study in the Detroit metropolitan area on energy efficiency access in low-income neighborhoods. This University of Michigan study analyzed access to and purchase of energy-efficient light bulbs. In this study, the cost to upgrade from an incandescent to an LED was twice as much in low-income neighborhoods due to the absence of cheaper bulbs available at big box retailers. Roger is curious what percent of lighting accounts for the average Oregon monthly electric bill. He noted it is 20 percent on average nationally. Roger showed a chart that displayed cost per bulb of incandescent bulbs, compact fluorescent bulbs and LED bulbs compared to households below the federal poverty level. What does Energy Trust know about Oregon prices, and if there is a disparity between customers based on income, how can that be addressed? The board discussed how this issue might also be interrelated to awareness.

Mike Bailey noted staff has been looking very closely at lighting prices. Compared nationally, prices in Oregon are lower and it looks like the chart displayed is two or three years old. There are differences in prices based on the type of store, and the program has tiered retail stores as one, two or three to indicate big box retailer to local hardware store. Rural areas tend to have the tier 3 stores. The program is developing a transition plan this year as there has been a saturation of LEDs at the tier 1 stores, which includes big box retailers. The plan will acknowledge there is still opportunity in the other tiers. One gap in information is the program does not know the income level of who is purchasing the

discounted bulbs at participating retailers. Mike noted the 20 percent statistic is fairly on par, an average home spending 20-30 percent on lighting is a good approximation.

Staff Report

Board of Directors Binder

Michael Colgrove introduced a new board of directors binder as a resource for new and existing board members. Board members are encouraged to review the binder and provide feedback. The binder was created at the suggestion of the Nominating Committee. Over time, it will be available electronically.

July Board Meeting

Michael reminded the board that the next meeting is July 25 and will be held in Klamath Falls. Board members are welcome to travel with staff or attend the meeting remotely at the Energy Trust office. Community outreach and customer site tours will be part of this board trip.

Secretary of State Performance Audit

Michael updated the board on the in-progress Secretary of State performance audit. The OPUC and Energy Trust received the draft audit and provided feedback. An exit interview with the auditors was held on June 4. It is expected the audit will be released to the public at the end of June. Michael noted the audit report is still confidential. More information will be shared once the audit is public. Commissioner Bloom thanked Pati Presnail, Amber Cole and staff for their support, analysis and review of the draft report. It was very helpful to the OPUC and the auditors.

Organizational Review Presentation

Amber Cole, Greg Stokes, Debbie Menashe and Betsy Kauffman provided the board with a status update on the Organizational Review Project. The project is to ensure Energy Trust is ready, nimble and adaptable for the future. The Organizational Review Team includes Betsy, Amber, Greg, Debbie Menashe and Scott Swearingen. Team members were selected to represent the entire organization and were not selected based on the group they work in.

Melissa Cribbins joined the meeting in person at 9:58 a.m.

Betsy noted the team is focused on taking an excellent organization and ensuring it can thrive in the future. The team has developed an executive summary, available to the board. Betsy noted the team's findings and recommendations have been vetted with staff and Management Team.

Debbie Menashe said the team was guided by guiding principles that included considering all organizational processes and structure, making recommendations that are adaptable for possible futures, engaging staff, consideration of change management and diversity, equity and inclusion, and gathering input from a variety of sources.

Debbie Menashe described the team's methodology and work plan over the past year. The process started with interviews of staff, Management Team and external stakeholders and organizations to gather thoughts on how organizations should prepare for change.

Amber described the International Development Research Centre organizational assessment tool the team used, which was field tested and refined over 30 years. The tool lists a variety of questions and

performance indicators to consider when evaluating the external environment, organizational capacity, organizational motivation and organizational performance. The team walked through each question after the summer 2017 interviews.

Susan Brodahl joined the meeting at 10:10 a.m.

Amber described how staff was engaged on this project. More than 80 percent of staff participated in six workshops. Staff was highly engaged and provided both positive and critical feedback. She addressed the organizational design principles that emerged from their research and process. She said the principle “form follows function” guided the team’s review. Design principles also included “align to strategy”, “group similar functions” and “plan for scalability”, among others.

The board asked how “centralize control functions” and “decentralize authority close to customer” work together as they seem mutually exclusive. Amber said it depends based on what part of the organization you are looking at. For instance, in Finance, standardization is very important while in program delivery, flexibility is needed to meet the evolving needs of customers. Greg provided detail on what “decentralized authority close to the customer” means, including providing more decision-making authority and autonomy to program managers instead of requiring them to send decisions up an authority chain. The board asked if “decentralize authority close to customer” is also related to the financial impact of the decision. The team confirmed that is the case. For instance, in the customer service area, representatives should be able to resolve low-level complaints while having a process to escalate a complaint that involves a larger dollar amount or implication.

Debbie Menashe reviewed the team’s 10 categories of recommendations. Nine are process-oriented and the last, “organizational structure”, is higher level and structure-oriented. Examples of specific recommendations within each category are in the executive summary. Debbie Menashe noted “organizational culture” emerged later in the process, was embedded in nearly all recommendations and is a critical element to success for the organization in the future.

Greg noted the team briefly considered the prioritization and sequencing of the recommendations. The intent is that the next team, the Organizational Review Implementation Planning team, will focus here in Quarter 3 and 4. The next team will develop a strategic timeline, identify resource needs and provide project briefs. Implementation would commence over 2019 and 2020. The board should expect items related to implementation to be in the 2019 budget, which they will review and act on in the fall.

The board discussed the role of the board in this project. They viewed the project as the purview of Michael and the Management Team, and asked if that is a standard approach from other organizations’ organizational reviews. Amber confirmed and noted there might be changes to alter board policies or processes. If so, the board will be engaged. Michael said ongoing status updates will provide context for the board if board policy or process changes do come to the board.

The board asked if an inventory or assessment tool was used for the “organizational culture” recommendation. Debbie and Amber responded that no specific culture assessment tool was used, but that the organization assessment tool applied in general included many questions around culture.

The board asked if the team reviewed the structure of the board, board committees and advisory councils to the board. Debbie Menashe said the team did not examine those bodies.

The board cautioned the team on flexible staffing as it introduces competition between groups when more than one group wants one person. The team noted processes and expectations will be needed to help avoid this.

Michael thanked the team for its work, and noted the team exceeded his expectations.

The board asked if the team views their recommendations as transformational or incremental. Greg said the recommendations are not on either extreme; in combination these changes will result in a significant shift in the future but the team does not view this work as “transformational”.

Budget Review Presentation

Pati Presnail, Jed Jorgensen, Mike Bailey and Oliver Kesting provided the board with an update on the Budget Review Project. Michael Colgrove introduced the team, which was formed to identify an option for an alternative budget process that might deliver the critical value the current budget provides and in a more efficient and effective manner. He recognized the full project team, which also includes Art Sousa, Alison Ebbott, Hannah Cruz, Scott Clark and Tara Crookshank.

Pati gave a high-level view of the current budget process, which is a six-month process and involves all areas of the organization as well as outreach and engagement with stakeholders and the public. Pati described the team’s discovery process, which included creating guiding principles, mapping the current process, gathering feedback from staff and external stakeholders, interviewing five external organizations and drafting the budget recommendations.

Jed Jorgensen reviewed feedback from external stakeholders. The feedback noted the budget represents a significant workload for all parties. The team heard the timelines don’t align with some stakeholder needs, for instance rate change filing timing. Stakeholders questioned if they have influence on the budget and action plan, and would like to be involved earlier in a more collaborative process. Jed reviewed feedback from staff, some of which was the same as feedback from external stakeholders. Staff provided recommendations as part of their surveys, and one suggestion is a better budgeting tool as the Excel-based tool is no longer adequate for the organization’s complex budget. Staff would like more time for stakeholder input, and an easier process to make changes to the budget and to ease the budgeting workload that hits at the same time as program year-end close-out in Quarter 4.

Jed described how the current budget flows from a five-year strategic plan, five-year sector plans and two-year action plans. He said the proposed recommendation is to maintain the five-year strategic plan and change the five-year sector plans and two-year action plans to three-year plans for each. The new three-year sector plans and three-year action plans would be called the Business Plan. To develop the Business Plan, work groups would be formed to identify with staff key drivers that could have potential to change savings, costs and market uptake among other examples. The key drivers would be used to indicate to staff and the board if something significant has changed in the three-year Business Plan and requires a relook at the plan.

Jed said another suggestion from staff and stakeholders was to separate planning from budgeting. This recommendation addresses that. The planning strategy work would be conducted over a longer timeframe earlier in the year and only once every three years. That work would then inform annual budgets, developed earlier in the fall each year. It is intended the work involved in the business planning would lead to a more streamlined and efficient fall budgeting process as stakeholders participate earlier and more deeply in the formation of the business plan and achieve agreement on the high-level goals.

Jed displayed a chart showing how the new Business Plan and annual budgeting process would be developed. For instance, in 2020 in the spring and summer, the Business Plan would be developed for 2021-2023. Also in 2020 in the fall, the 2021 annual budget would be developed. Then, in fall 2021 the 2022 budget would be developed and in fall 2022 the 2023 budget would be developed. Oliver Kesting provided a detailed explanation of this three-year business planning and annual budgeting recommendation. The Business Plan would include savings, generation and budget ranges, and sector, program and support group action plans. This information would be used to negotiate budgets with the utilities and board earlier than currently. Stakeholder engagement, including with the OPUC, Conservation Advisory Council and Renewable Energy Advisory Council, and public comment will also be solicited. Once approved, this becomes the Business Plan. The budgets would stay as annual budgets, and also include stakeholder engagement, public comment and board approval. The annual budget will be moved earlier in the fall and is expected to conclude by November instead of December. This gives staff more time to focus on year-end closeout and to develop upcoming contractor scopes of work. Oliver noted that if any key drivers change, the Business Plan would be relooked at as warranted. A review of key drivers will be included every spring to ensure the Business Plan stays current. Oliver said the team expects any relook at the Business Plan would be rare as the Business Plan uses ranges and a portfolio approach. If the Business Plan is always reopened every year, the benefits of moving to a three-year plan would disappear.

Oliver displayed a chart demonstrating workload across the organization between the current process and the proposed process. More planning timing will be needed every three years to create the Business Plan, and it is anticipated that will be offset by less work in the other two years of the cycle plus a shift in that work away from the heavy Quarter 4.

Mike Bailey reviewed the recommendations' critical success factors, including needing OPUC and utility support, improved forecasting abilities from Energy Trust and the utilities, increased flexibility in the use and level of program reserves and new budgeting software. Mike Bailey listed the expected benefits of the proposal, including increased stakeholder engagement, moving budgeting work for staff away from the year-end closeout season, increased program flexibility and an increased strategic perspective in the development of the budget and action plans.

At this point in the project, the team has presented to staff, utilities, the advisory councils and the board Finance Committee. Feedback included questions on the makeup and purview of the workgroups and the cost of the changes. Overall, there was broad support for the budget recommendation.

Michael Colgrove described the next steps. If there are no objections from the board today, this team will close out and a Budget Review Implementation Planning Team will form. Over the next six months, this second team will prepare a detailed implementation plan on who needs to be engaged, how and

when. In 2019, a Budget Implementation Team will then be formed to take the plan and develop the budgeting software, planning processes, budgeting processes and engagement approach. Any needed budget is expected to be included in the 2019 budget, which will use the current process.

Commissioner Bloom appreciated the team's work and recommendation as presented to the OPUC, and supported Energy Trust to continue down the path of exploring it further.

The board is concerned about the large workload every three years to develop a Business Plan while still completing current work. Staff need to take into consideration the shift may only be shifting to another busy or subscribed time of year. Michael Colgrove noted that currently one issue is some projects are put on hold during Quarter 3 and Quarter 4 because of the time-intensive budget. This recommendation would help solve that issue.

The board appreciated the focus on increased collaboration and concern with the organization's forecasting approach and capabilities. The board noted how the five-year strategic plan and three-year Business Plan are out of alignment, can the strategic plan be updated more frequently? The team noted they are thinking around the alignment and will work with the Strategic Planning Committee. The board commented this recommendation aligns with the Organizational Review Team's recommendation around flexibility.

The board asked what the budgeting software solution will look like. Pati noted there are one or two tools the team is looking at.

The board asked who is part of the workgroups. Pati noted that is yet to be worked out by the Budget Review Implementation Planning Team.

The board questioned how this recommendation works with each of the five utility's integrated resource planning processes. Oliver noted each IRP is on a different schedule. The idea is the information from the Business Plan will inform those IRPs, and if new information is available, it will inform the next IRPs under development.

Planning and Evaluation

SBW Consulting Contract Amendment—Resolution 838

Phil Degens and Erika Kocielek introduced the resolution. SBW Consulting is conducting the 2013-2014 impact evaluation for the Production Efficiency program. The resolution requests the board approve an increase of \$33,000 to allow for activities not part of the contract's original scope of work. Staff consider the costs in line with similar costs and requests the board approve the resolution.

The board noted it is important to get scopes of work right at the outset, and noted it is not ideal that the contract came in under the \$500,000 limit, which would have required board approval at the beginning, and the increase brings it above that limit.

The board noted Production Efficiency programs are not as established as commercial and residential programs. The attributes needed to understand the performance of a program are not as dialed in as it is for those sectors.

The board asked what additional detail will be gathered by the spending increase. Phil said the information will inform the realization rates for the program, which ultimately determine reportable savings for the program, budgeting assumptions and true up.

The board asked whether the additional information will be relevant as some measures, like Strategic Energy Management, have a lifespan that is only three years and would be out-of-date in 2018 if using 2013 data. Phil said the three-year measure life for Strategic Energy Management is an assumption and something to continue exploring. The budget increase request is largely due to the primary research source, prior project documentation, not being detailed enough for the evaluator to complete the impact evaluation.

PROPOSED RESOLUTION 838
AUTHORIZING THE EXECUTIVE DIRECTOR
TO EXECUTE AN AMENDMENT TO A CONTRACT WITH SBW CONSULTING

WHEREAS:

- 1. Following a competitive solicitation process conducted in March 2016, SBW Consulting was awarded the contract to conduct an impact evaluation for Energy Trust's Production Efficiency program, covering program years 2013-2014.**
- 2. The Board of Directors of Energy Trust approved an amendment of the contract to authorize funding of up to \$540,000 for the impact evaluation services to be provided by SBW Consulting in July 2017.**
- 3. SBW Consulting has continued to conduct the impact evaluation for Energy Trust's Production Efficiency program, but the scope of the evaluation has expanded to include additional activities that were not known at the time of the previous contract amendment. The added scope and budget of the proposed amended impact evaluation contract is to cover unanticipated additional detailed impact analysis for Strategic Energy Management (SEM) and custom projects in the Production Efficiency program in order to complete and report on impact evaluation savings results, and make observations and recommendations for program improvement.**
- 4. The expected not-to-exceed maximum budget for completion of the amended services under the contract with SBW Consulting would be \$573,000, which increases the current contract budget by \$33,000, exceeds the executive director's signature authority and requires board of directors' approval.**

It is therefore RESOLVED that the Board of Directors of Energy Trust of Oregon, Inc., hereby authorizes the executive director to sign an amendment to the contract for evaluation services for the 2013-2014 Production Efficiency program impact evaluation with SBW Consulting authorizing additional scope and added budget of up to \$33,000 for a total maximum budget cap of \$573,000.

Moved by: Debbie Kitchin
Vote: In favor: 8
Opposed: 0

Seconded by: Melissa Cribbins
Abstained: 0

Irrigation Modernization Presentation

Jed Jorgensen introduced Julie O'Shea, Farmers Conservation Alliance executive director (FCA). Irrigation modernization is an initiative within the Other Renewables program. FCA has been working

with Energy Trust since 2015 to help irrigation districts modernize their infrastructure for renewable energy potential, energy efficiency improvements, water and environmental benefits, and other economic and resiliency benefits.

Jed provided an overview of irrigation modernization, which is at the nexus of energy, water and agriculture. Food production uses about 80 percent of Oregon's water, and about half evaporates or seeps into the ground before reaching the farm. Irrigation districts utilize about 480 billion gallons of water a year, but the canals they use, including river diversions and fish screens are degrading or inadequate. These inadequacies and negative impacts are further exacerbated during drought years. Modernizing an irrigation system starts by replacing canals with pipe. By doing so, evaporation rates significantly decrease and the water becomes pressurized, which allows for a potential hydropower system where there is surplus pressure. This is non-impact hydropower potential and the main reason Energy Trust is supporting irrigation modernization. Jed reviewed a half dozen other benefits to modernizing irrigation infrastructure, including drought resilience and improved water temperature to benefit fish.

Jed said FCA has based much of its work on a few key projects, including the Three Sisters Irrigation District, which has participated with Energy Trust. Three Sisters Irrigation District has nearly completed a full pipe installation of its entire canal network, has one hydropower system installed so far and is starting construction on two additional hydropower systems. FCA is creating solutions that are comprehensive, bring multiple partners to the table and accelerate this work from being decades-long to years-long. FCA is helping bring irrigation modernization to scale in a replicable manner for the state of Oregon and even other states.

Julie noted that in the Western U.S. there are a million diversions of water from streams and rivers. In Oregon, there are 70,000 diversions. These diversions and the canals they use are 75 to 100 years old. Modernizing was left to the irrigation districts, irrigators and farmers. It was very difficult and costly for them to navigate the process to modernize. For instance, one district is 17 families and the cost of modernizing is \$20 million. Julie described the evolution of FCA, a nonprofit originally set to expand the use of the Farmers Irrigation District-licensed fish screen. Conducting outreach on the fish screen revealed the difficulties irrigation districts, irrigators and farmers were facing in general with their aging systems. These potential customers were needing help to modernize first and needed a trusted partner.

Julie said FCA stepped in, and working with Energy Trust, helped develop Energy Trust's irrigation modernization initiative. In a broader fashion, FCA now conducts outreach on holistic irrigation modernization in partnership with the targeted irrigation districts, supporting them with developing modernization plans, putting together financial packages and navigating a complex process that crosses multiple jurisdictions and agencies. FCA is also working with dozens of irrigation districts, making it easier for resource-constrained agencies to work with the districts. Currently, FCA is working with 16 districts; of which, eight are from the Deschutes Basin. Over time, FCA's work has led to securing \$50 million for those eight districts.

Julie reviewed a slide of the overall possibilities of irrigation modernization. Modernizing the first nine districts would result in 38 megawatts of hydropower capacity, 59,650 MWh of savings, 557 cubic feet per second of water conserved and 22,790 short-term jobs. FCA is receiving interest now from other states and at the federal level.

The board asked why there are no Eastern Oregon districts from the Hermiston area. Julie mentioned Owyhee Irrigation District just joined and FCA is also working with districts in the Umatilla area. Jed noted there must also be a strong commitment from the district and district's board. Julie noted FCA is also working upstream in some of these districts.

The board asked if there is push-back from local landowners. Julie said that does happen and is generally connected to urbanization. FCA conducts a public process to educate landowners of the impact and the benefits.

The board asked how FCA is funded. Julie said their funding comes from Energy Trust and fish screen sales as well as a mix of funds from irrigation districts and private funding.

The board took a break from 12:23 – 12:38 p.m.

Energy Programs

Red Rock Biofuels Project—Resolution 839

Amanda Potter presented a request for the board to authorize incentives of up to \$2 million for an energy efficiency project associated with a biofuels production facility in Lakeview, Oregon, which is estimated to save at least 48 million kilowatt hours (5.5 average megawatts) per year. Amanda introduced David Wynde, consultant with Wynde Consulting, and Jeff Manternach, CEO of Red Rock Biofuels.

This megaproject was brought to the board in 2016. At that time, the board waived the Production Efficiency incentive cap on the condition that Red Rock secure financing by November 2016. They have now secured all funding, including \$245 million of state bonds and \$75 million from the Department of Defense. All major permits are in place.

Red Rock is part of a new biofuels production facility in Lakeview. It will convert woody biomass to energy and jet fuel. The efficiency project will convert waste heat to power that will be used onsite. Energy Trust performed significant due diligence in reviewing this project, including reviewing all materials and Red Rock financial statements. There was no risk identified based on the structure of Energy Trust incentives, which includes paying incentives only after energy savings have been realized.

The board asked about risks. Amanda responded that risks are around the overall biofuels project, which is the first of its kind at this scale, not regarding the energy-efficiency project.

Energy Trust estimates levelized costs to be lower than Production Efficiency standard projects.

The board asked about the feedstock. Jeff responded that existing feedstock agreements are with private landowners. It's primarily Ponderosa pine, with other mixed conifers.

The board asked if the conversion process is enzyme-based. Jeff said no, the Red Rock process is not biological or enzymatic, but rather thermocatalytic, using heat and temperature to drive the conversion.

The board asked why the facility is sited in Oregon. Jeff said Oregon is a great place for feedstock because there is a lot of waste wood on private and federal lands that would otherwise burn up.

The board asked when the construction is expected to be completed. Amanda responded that there are intermediate construction milestones, and the facility needs to be built by September 2021. This gives an eight-month cushion for potential delays.

The board asked if the project has an energy facility siting permit. Jeff said no, because the project doesn't have air emissions so it is considered a minor source and the permit is not required. Janine noted that facility siting permits are required based on production volume.

**RESOLUTION 839
WAIVING PROGRAM INCENTIVE CAP AND APPROVING
INCENTIVES FOR THE RED ROCK EFFICIENCY PROJECT**

WHEREAS:

- 1. The Energy Trust Production Efficiency program has worked with Red Rock Biofuels, LLC (Red Rock) to identify a custom waste heat to energy system project (the Project) in connection with the gasification process at Red Rock's new biofuel production facility, to be constructed and located in Lakeview, Oregon.**
- 2. Energy efficiency aspects of the Project were reviewed through standard Energy Trust processes for complex custom-track industrial projects, including a technical energy analysis study commissioned by Energy Trust and carried out by a waste heat to power expert.**
- 3. The Project's energy savings will be very cost-effective compared to the cost of savings from the average Production Efficiency program custom project. The incentive for the Project is projected and would be budgeted at \$.0417/first-year kWh, a levelized cost of <0.5 cent/kWh; while Production Efficiency program custom capital projects average \$.13/first-year kWh, or about 2-3 cents levelized.**
- 4. Energy Trust funding would be contingent on Red Rock's agreement to suspend self-direction at the facility site where the Project is located for at least three years.**
- 5. Electric energy generated by the Project will be used by Red Rock on-site to reduce the amount of electricity purchased for the facility.**
- 6. Energy Trust funding would be conditioned on Red Rock's construction completion by September 2021 and would be payable annually based on savings performance.**

It is therefore RESOLVED that the board of directors of Energy Trust of Oregon:

- 1. Waives the Production Efficiency Program's incentive cap for this project; and**
- 2. Authorizes the executive director to negotiate and sign an incentive agreement with Red Rock Biofuels LLC for up to \$2 million in total incentives payable on the following terms and conditions:**
 - Agreement to suspend self-direction at the site for at least three years;**
 - Incentives to be paid in annual payments tied to savings performance;**

- **Post-installation measurement, verification and evaluation plans for the Project will be required;**
- **Red Rock to complete construction by September 2021**

Moved by: Melissa Cribbins
Vote: In favor: 8
Opposed: 0

Seconded by: Debbie Kitchin
Abstained: 0

Willow Lake Gas Biogas Project—Resolution 840

Jed Jorgensen and Lily Xu presented a request for the board to authorize an incentive of \$3 million for the Willow Lake biogas project with the City of Salem. Biogas is a focus area for the Other Renewables program. This will be the seventh biogas project with municipalities. Staff focuses on these projects because municipalities are stable, long-term partners, projects are net-metered and retail rates are higher than wholesale. Energy Trust brings expertise in supporting these projects. This project has very few risks and reasonable costs.

Lily introduced three City of Salem employees, Wastewater Treatment Division Manager Jue Zhao, Senior Project Manager Ben Haney and Assistant City Engineer Keith Kuenzi. She provided a summary of the project. The facility is located in Salem and uses anaerobic digestion to generate biogas from organic waste matter, which is used to produce heat and electricity. Salem has operated its wastewater treatment plant since 1964, and the existing engine is near the end of its useful life. The city is proposing a new engine, system and building. The project would produce energy at 7.6 cents per kWh for 20 years, and will deliver power to PGE. The project is expected to come online at the end of 2019.

Energy Trust does not expect any complications with this project. Generation is expected to reach optimum output by year 20. All of the generation will be consumed onsite, eliminating nearly 50 percent of the facility's current energy needs. Total capital project costs are expected to be \$9.7 million, with annual maintenance costs around \$210,000.

The city has secured a \$3 million PGE Renewable Development Fund grant and is pursuing a \$250,000 Oregon Department of Energy Renewable Energy Development grant, and will recover other costs through rates. Above-market costs are calculated to be \$3.2 million.

Staff proposes an incentive of \$3 million with \$500,000 paid upon commercial generation and subsequent payments based on quarterly production. There are a few minor risks that the city is expected to overcome, including potential installation of a fiber optic line for interconnection with the utility and potential high costs of a construction bid. This project has many strengths, including economic and environmental benefits, economies of scale, an experienced team, performance of due diligence and adherence to best practices.

Directors Alan Meyer and Mark Kendall recused themselves because they are Salem residents and taxpayers.

The board asked if it's typical for a municipal project to receive so much utility ratepayer funding. Jed explained that the PGE grant is from voluntary funds. This is not typical, but there is no typical scenario for these very large and complex projects.

The board asked how this spending will impact other projects, such as irrigation modernization. Jed responded most irrigation districts are in Pacific Power territory, such as in Eastern Oregon. Biogas projects are some of the larger funding opportunities in PGE territory. These funds are not competitive with other project funds.

RESOLUTION 840

AUTHORIZING INCENTIVES FOR THE WILLOW LAKE BIOGAS FACILITY

WHEREAS:

- 1. In November 2017, Energy Trust began a competitive process to allocate up to \$4.0 million in incentives for renewable energy facilities in Portland General Electric service territory and \$2 million in Pacific Power territory. Two applications were received, one hydropower and the City of Salem's proposed Willow Lake Biogas Project.**
- 2. The City of Salem proposes to install a 1,176-kW cogeneration engine and biogas cleaning equipment at the existing Willow Lake Water Pollution Control Facility, resulting in 7,610 MWh of generation annually, on average. Generated power would offset energy consumed from Portland General Electric. Project construction is expected to begin in winter 2018, with commissioning and testing to start in in fall 2019, and commercial operation in winter 2019.**
- 3. Staff finds that the project has significant strengths in that it will be built by an entity with a proven track record as a biogas cogeneration operator, it will be municipally owned, and it has secured a significant grant. Staff sees no significant permitting challenges and few other risks.**
- 4. Above-market costs are \$3,210,710 (present value) over a 20-year period if the project does not receive a RED grant or \$3,048,673 if the project receives a \$175,000 RED grant.**
- 5. Staff proposes an incentive of up to \$3,000,000 to be paid partially up front and partially over time based on actual generation. The first payment would be \$500,000, payable upon the project achieving commercial operation. Subsequent payments would be made quarterly at a rate of \$0.25 per kWh generated as long as the project achieves at least 75% of the expected generation for the quarter.**
- 6. On a present-value basis, Energy Trust's incentive is worth \$2,706,790, representing 85% to 88% of the project's above-market cost. At \$3.45 million/aMW, the incentive is in the range for has previously supported biogas projects.**
- 7. Staff proposes to seek Renewable Energy Certificates (RECs) equivalent to 85 percent to 88 percent of the project's expected generation over 20 years and to include milestones in the funding agreement with the City of Salem to allow Energy Trust to withdraw funding if the project is unable to move forward.**

It is RESOLVED that the Executive Director, or his designee, is authorized to negotiate and execute a funding agreement for up to \$3,000,000 in incentives to offset the above- market cost of the 1,176-kW Willow Lake Biogas Facility owned by the City of Salem, consistent with the terms outlined above.

Moved by: Debbie Kitchin

Seconded by: Anne Root

Vote: In favor: 6
Opposed: 0

Abstained: 2

New Buildings Program Management Contract—Resolution 841

Jessica Iplikci and Oliver Kesting presented a request for the board to authorize staff to negotiate and sign for a New Buildings program management contract with CLEAResult for an initial term of three years, with the potential for up to two one-year extensions for a total contract term not to exceed five years.

Energy Trust policy requires competitive solicitation of Program Management Contractor contracts every five years. The fifth and final year of Energy Trust's current contract with CLEAResult to deliver the New Buildings program is 2018. The competitive selection process is a best practice and ensures continued value for ratepayers.

Through the process, staff consulted with a diversity, equity and inclusion consultant for input on the draft Request for Proposals language. The team reviewing responses was comprised of staff, a NEEA representative and a DEI expert. Energy Trust received nine intents to respond and two proposals. Scoring criteria included cost at 40 percent, design and delivery at 25 percent, strength and cohesiveness of the program team at 20 percent and DEI at 15 percent. The review team concluded that CLEAResult submitted the strongest proposal. Strengths included the ability to deliver cost-effective energy savings, a focus on strategic program design, ability to develop new measures and offerings, ability to support broader market engagement and engage diverse customers, and ability to develop new partnerships.

The board noted that there were nine intents to respond but only two proposals. Is that an unusually small number of responses? Oliver explained that some entities that expressed an intent to respond partnered on a proposal. New Buildings is a very complex program so it's typical to get a small pool of respondents. Jessica added that there are subcontractors as part of the CLEAResult contract, so Energy Trust will work with some new subcontractors.

RESOLUTION 841

AUTHORIZE A PROGRAM MANAGEMENT CONTRACT FOR THE NEW BUILDINGS PROGRAM

WHEREAS:

- 1. With assistance from a selection committee including outside parties, staff has conducted a fair and open procurement process to select a program management contractor to manage New Buildings program services for the next 3-5 years;**
- 2. CLEAResult Consulting, Inc. was selected and contract terms are being negotiated;**
- 3. Staff has assumed and estimated a total first-year program management budget for 2019, including first-year incentives, contracted delivery, and possible performance compensation of approximately \$21,131,372 million, which includes approximately \$6,135,922 million in program delivery, \$92,847 in solar delivery, \$12,183,809 in incentives, and internal Energy Trust costs.**
- 4. Actual savings and costs will be reviewed by the Energy Trust board as part of the annual budget and action plan process. Based on current assumptions, staff estimates the following program savings and fully loaded costs in 2019:**

	Electric	Gas
Savings	56,510,692 kWh	1,039,233 therms
\$/Unit Savings	\$ 0.328/kWh	\$2.523/therm
Levelized Cost	\$0.030 /kWh	\$ 0.216 /therm

It is therefore **RESOLVED**:

8. **Subject to determination of a final contract amount based on the board-approved 2019 budget, the executive director or his or her designee is authorized to enter into a contract with CLEAResult Consulting, Inc. to manage the New Buildings program for an initial term from January 1, 2019 through December 31, 2021.**
9. **First-year contract costs and savings goals included in the contract shall be consistent with the board-approved 2019 budget and two-year action plan. Thereafter, the contract may be amended consistent with the board's annual budget and action plan decisions and the executive director or his designee is authorized to sign any such contract amendments.**
10. **The final contract may include a provision allowing staff to offer one-year extensions beyond the initial term if the program management contractor meets certain established performance criteria. In no event would the total term of the contract plus extensions exceed five years.**
11. **Before extending this contract beyond the initial term, staff will report to the board on the program management contractor's progress and staff's recommendation for any additional extension time periods. If the board does not object to extension, contract terms would remain as approved in the most recent action plans, budgets and contract at the time of extension, and the executive director or his designee is authorized to sign any such contract extensions.**

Moved by: Alan Meyer
 Vote: In favor: 8
 Opposed: 0

Seconded by: Lindsey Hardy
 Abstained: 0

Commissioner Bloom left the meeting at 12:50 pm.

Committee and Advisory Council Reports

Finance Committee, Susan Brodahl

The March 2018 financial statements are in the board packet. The variance of revenue is very close to the same time period last year. Reserves are trending as anticipated.

Compensation Committee, Debbie Menashe for Dan Enloe

At the April meeting, staff and Director Enloe discussed the transition of Energy Trust's 401(k) plan from The Standard to The Principle and Cable Hill Partners. Staff also gave an update on the fund lineup mapping. The transition is going smoothly. The funds have been transferred and the one-month black-out period should end June 24. Education meetings with staff have occurred.

Staff also provided at the meeting an updated on the 2017 employee performance review process, which resulted in a range of merit increases. Staff also completed a pay equity analysis with a statistical firm in Maryland, reviewing staff compensation at various levels. There were about four roles with suspect differences, which is a difference of more than 10 percent of like-positions. Upon deeper review, it was determined the differences were allowable.

Going forward, staff is working to prepare an organizational compensation philosophy to help guide decisions around compensation and compensation structure for the organization. Staff will update the Compensation Committee as this work proceeds.

While the pay equity analysis won't be completed annually going forward, staff will take lessons learned into future years.

Evaluation Committee, Lindsey Hardy

At the last meeting, the committee reviewed the draft customer insights study. Once a staff response is drafted, it will be posted online. The survey received 1,000 respondents, half participants and half non-participants. Findings indicate participants are more likely to be white, have higher education levels, be employed, own their own home, make higher incomes and have children in the home. Findings also indicate utilities are more a source of information on programs than Energy Trust. Barriers to making improvements beyond money is time constraints and not owning their own homes. An area of opportunity for Energy Trust is respondents are more likely to talk to friends and family about energy use.

The board commented on the finding that more than 50 percent of those surveyed use a website as a major source of information and how this speaks to the value of Energy Trust's website. Sarah Castor noted the respondents are not necessarily talking about Energy Trust's website specifically but any website.

The committee reviewed a residential grow light study. It's the first of its kind for this market. The biggest opportunity for improvement are those people using HID lighting instead of LED lighting. Most people buying HIDs are buying at brick and mortar stores while LEDs were purchased online. An area for consideration is trying to understand the market size. Monthly energy use is not a concern to these consumers but upfront cost is.

The committee also reviewed the 2017 Fast Feedback results. There is great satisfaction with Energy Trust programs at 93 percent, and even higher when looking only at non-residential programs where it is 97 percent. The survey is moving online for 2018.

The committee reviewed a solar verification process evaluation. There is high quality control in the solar market for Energy Trust-incented systems. Verifiers outside Energy Trust territory report that Energy-Trust-supported systems are of higher quality, crediting Energy Trust's verification process. Some participants are willing to pay up to \$100 for verification, showing the value of this service provided by Energy Trust.

The committee reviewed the Existing Buildings impact evaluation. The objective of impact evaluations is to estimate realized savings. The evaluation assessed Strategic Energy Management, the standard track, the custom track and the lighting track.

Policy Committee, Alan Meyer

The committee reviewed the projects and contract reviews the board voted on today. There were no policies up for review. The committee ran out of time to discuss a process for evaluating new opportunities funded outside the public purpose charge. This process was drafted after the community

solar discussion in November 2017. The committee approved three new Conservation Advisory Council members: Jason Klotz from Portland General Electric, Dave Moody from Bonneville Power Administration and Will Gehrke from Citizens' Utility Board of Oregon.

Strategic Planning Committee, Mark Kendall

The Board Strategic Planning Workshop was in late May. Mark thanked the board for participating and engaging in the discussion. Mark thanked the staff who supported the workshop behind the scenes. Next steps are for the committee to develop a work plan and outreach schedule for the 2020-2024 Strategic Plan.

Board Nominating Committee, Debbie Kitchin

The committee finalized a process document for recruitment, selection and orientation of new board members. The process will be used to fill the open board seats. Revisions to the process may be made as those recruitments proceed. Debbie Kitchin anticipated interviews to take place in mid to late August. Staff will provide the directors with talking points to use when communicating with people who have been nominated. The board noted nomination communications need to be clear this is a non-stakeholder board of directors. The Nominating Committee is taking a balanced approach to nominating candidates that are outside this industry and those steeped in energy policy. Debbie Kitchin clarified the process has a two-part orientation for new members, and encouraging all board members to attend. In addition, a separate annual board training may be developed that includes board member obligations as well as a presentation by the OPUC.

Conservation Advisory Council, Lindsey Hardy and Alan Meyer

At the May meeting, the council reviewed an air conditioning study to determine potential cost-effectiveness. The results of the study indicated very limited and specific instances where air conditioning might be cost effective. The council then spent time to review the results of an interactive workshop in March on what topics to bring to the council, at what point in process and how to present it to the council. Out of that March discussion, staff drafted a guidance document to inform the in-place Conservation Advisory Council operating agreements. The guidance document lists six categories of topics staff will strive to bring forth to the council, commitment to engage with them differently and an exploration of bringing in different facilitation techniques. The council will review both documents at the June 20 meeting and staff will check back in on the topic at the November meeting.

The board noted they see the Conservation Advisory Council as having technical expertise that board members don't necessarily have and their role is to support staff with deep knowledge of the efficiency world.

Renewable Energy Advisory Council, Alan Meyer

At the May meeting, the Solar program brought forth a program status update given the state Residential Energy Tax Credit expiration. There has been a market decline in solar installations and applications. The Solar program provided an analysis on the impact to peak from installations, as requested by the OPUC. The meeting also included a discussion on solar and storage, and what Energy Trust's role is in the market. The council reviewed the Willow Lake biogas project, as well as a hydropower project at Wallowa Lake State Park. The latter project's incentive is below the threshold requiring board approval. The council also reviewed the strategic planning process, and potential implications of the SB 1149 sunset on renewable energy program planning.

Adjournment

The board adjourned at 2:33 p.m.

The next meeting of the Energy Trust Board of Directors will be on Wednesday, July 25, at 10 a.m. at the Oregon Institute of Technology Campus – Sunset Room, 3201 Campus Drive, Klamath Falls, OR 97601 and Energy Trust of Oregon Office – 421 SW Oak Street, Suite 300, Portland, Oregon 97204.

Mark Kendall, Secretary

PINK PAPER

Board Decision Committee Assignments

July 25, 2018

**RESOLUTION 843
BOARD COMMITTEE APPOINTMENTS
(SUPERSEDES RESOLUTION 837)**

WHEREAS:

1. Energy Trust of Oregon, Inc. Board of Directors are authorized to appoint by resolution committees to carry out the Board’s business.
2. The Board President has nominated new directors to serve on the following committees.

It is therefore RESOLVED:

1. This resolution supersedes Resolution 837, adopted by the board at its June 6, 2018 meeting.
2. That the Board of Directors hereby appoints the following directors to the following committees for terms that will continue until a subsequent resolution changing committee appointments is adopted:

Audit Committee
Anne Root, Chair
Melissa Cribbins
Mark Kendall
Karen Ward, outside expert
Roger Hamilton (ex officio)
Pati Presnail, staff liaison
Board Nominating Committee
Debbie Kitchin, Chair
Alan Meyer
Anne Root
Eddie Sherman
Steve Bloom, OPUC (ex officio)
Roger Hamilton (ex officio)
Greg Stokes, staff liaison
Compensation Committee (formerly 401(k) Committee)
Melissa Cribbins, Chair
Mark Kendall
Roger Hamilton (ex officio)
Debbie Goldberg Menashe, staff liaison
Executive Director Review Committee
Melissa Cribbins, Chair
Debbie Kitchin
Roger Hamilton (ex officio)
Finance Committee
Susan Brodahl, Chair
Ernesto Fonseca

Debbie Kitchin
Anne Root
Roger Hamilton (ex officio)
Pati Presnail, staff liaison
Policy Committee
Alan Meyer, Chair
Ernesto Fonseca
Eddie Sherman
Anne Root
Elaine Prause (ex officio)
Roger Hamilton (ex officio)
Debbie Goldberg Menashe, staff liaison
Program Evaluation Committee
Lindsey Hardy, Chair
Susan Brodahl
Alan Meyer
Ken Keating, expert outside reviewer
Jennifer Light, expert outside reviewer
Dulane Moran, expert outside reviewer
Jamie Woods, expert outside reviewer
Warren Cook (ex officio)
Roger Hamilton (ex officio)
Sarah Castor, staff liaison
Strategic Planning Committee
Mark Kendall, Chair
Susan Brodahl
Lindsey Hardy
Janine Benner, ODOE (ex officio)
Elaine Prause, OPUC (ex officio)
Roger Hamilton (ex officio)
Debbie Goldberg Menashe, staff liaison

3. The executive director, general counsel or chief financial officer are authorized to sign routine 401(k) administrative documents on behalf of the board, or other documents if authorized by the Compensation Committee.
4. The board also acknowledges that the following board members have committed to attend advisory council meetings:
 - a. Conservation Advisory Council: Lindsey Hardy and Alan Meyer
 - b. Renewable Energy Advisory Council: Alan Meyer and Ernesto Fonseca

Moved by:

Seconded by:

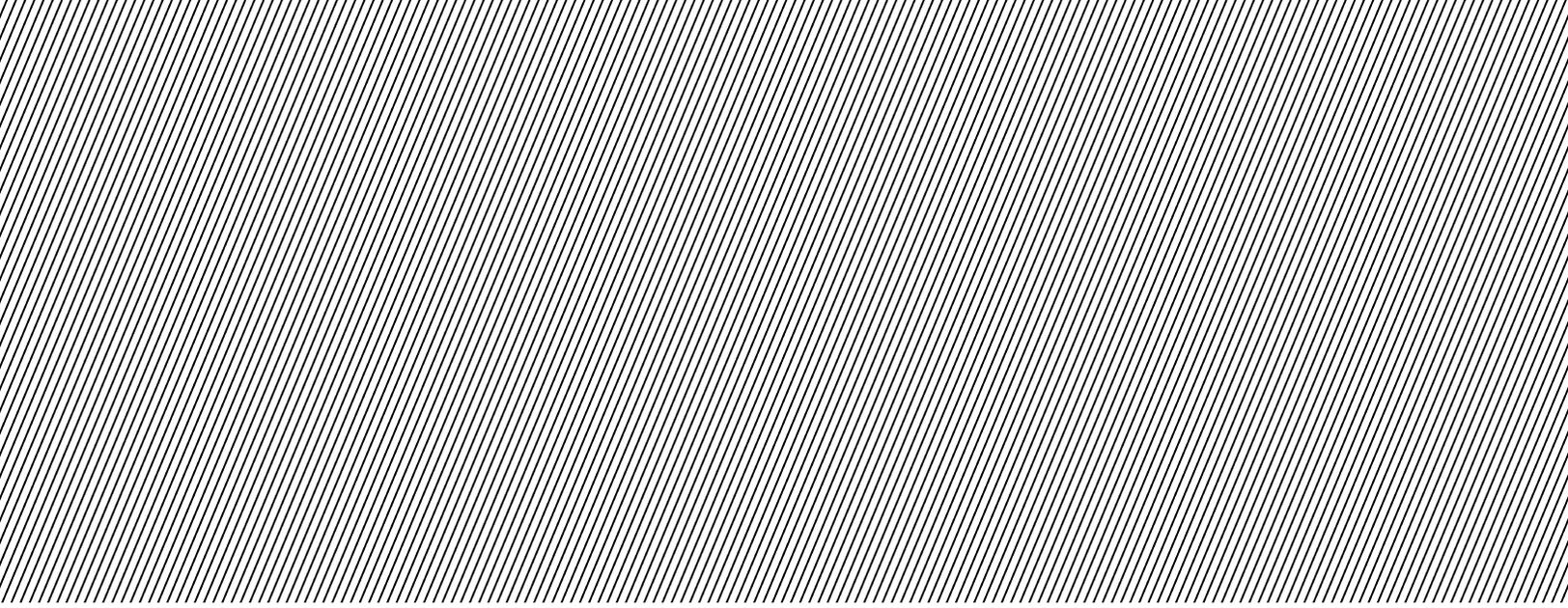
Vote:

In favor:

Abstained:

Opposed:

Tab 2



Awareness and Education as a Long-term Investment in Program Activity Board Learning Topic

Prepared by Shelly Carlton, Sue Fletcher

Introduction

At Energy Trust of Oregon's Board of Directors May 2018 Strategic Plan Workshop, staff presented the last of a series of papers on topics determined to be relevant to the organization during the time period of its next strategic plan (2020-2024). The goal of the papers was to educate and inform the board about the potential impact of these topics and enable its directors to better assess risk, identify opportunity and guide the direction and goals of Energy Trust. Board members saw value in an additional presentation on the topic of awareness and education. This topic was last presented to the board at its May 2016 Strategic Plan Workshop, and this paper provides an update on our work in this area since that time and key considerations for the board over the next strategic plan period.

Background

Energy Trust provides comprehensive energy efficiency and renewable energy solutions for 1.6 million utility customers. The information, technical services, cash incentives and contractor connections provided help homeowners, renters, multifamily property owners, small and large businesses, manufacturers, farmers, school administrators and other customers save energy and generate their own energy through renewable power. Energy Trust promotes offers to customers through many channels (illustrated below) to generate awareness of and drive engagement in program services and incentives. Energy Trust meets annual goals through these marketing interventions and resulting delivery of customer services and incentives. Energy Trust seeks to balance its overall budget for marketing activities with savings or generation sought on an annual basis.

Education and marketing to increase customer awareness and drive program activity is a necessary and long-used strategy of Energy Trust. However, not all customers become aware or engaged in energy efficiency or renewable energy offers through these marketing efforts. Based on surveys of residential customers conducted over

multiple years, unaided awareness of Energy Trust as a resource to assist with energy projects is around 14 percent. This number increases when survey respondents are provided with information about Energy Trust and the services offered.

Energy Trust Primary Marketing Channels



Some customers require additional exposure to marketing offers over time, or unique channels and education, before they are ready to take action. Opportunities exist to evolve, customize, broaden and deepen our work in education and general awareness marketing, particularly as Energy Trust seeks to reach and engage new customers who have not yet participated in our programs. Energy Trust has expressed a commitment to deeper engagement with low-income customers, rural customers and communities of color through its Diversity, Equity and Inclusion (DEI) Initiative. This initiative is an effort to understand gaps in participation, and identify opportunities to effectively engage diverse customers in energy efficiency and renewable energy programs. Awareness and education efforts may support this work by offering new ways of reaching customers, and spur creative thinking about changes to existing marketing messages and channels.

In preparation for the development of Energy Trust's 2020-2024 Strategic Plan, this paper explores the longer-term investments in marketing and education that could be made to increase overall awareness and participation by new customer groups. During the planning process, the board will assess strategies and opportunities that could be leveraged to achieve organizational goals and whether/how increased energy education and market awareness could be a long-term strategy for achieving savings and generation goals

Recap of Past Presentations to the Board

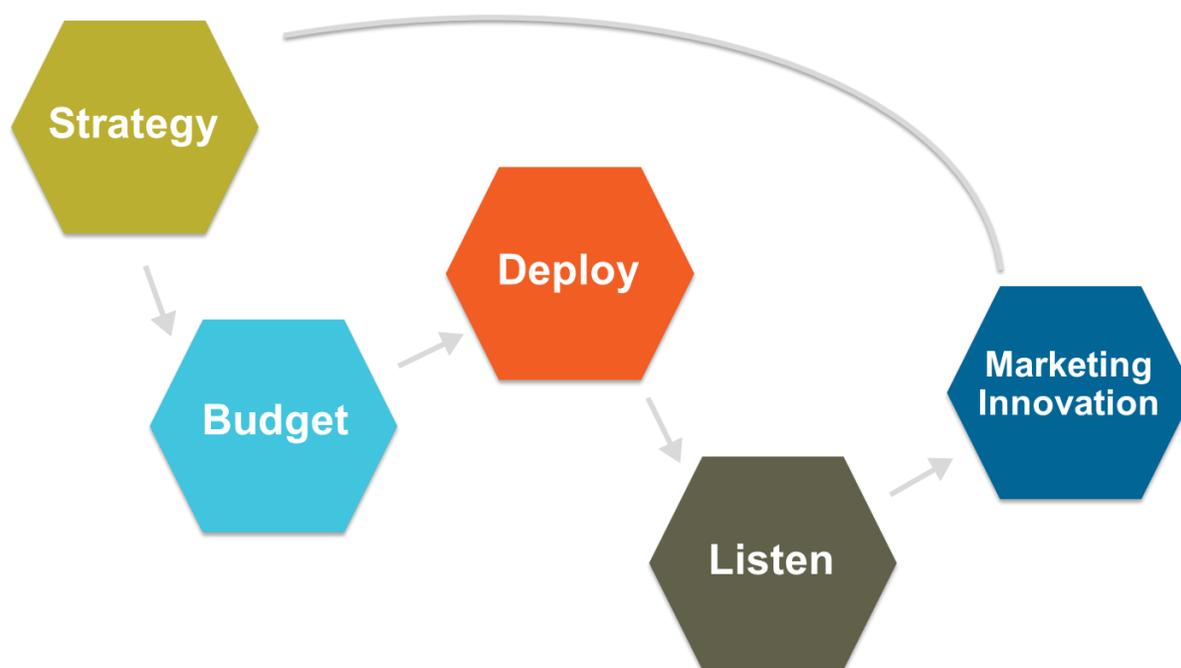
In September of 2015, marketing staff at Energy Trust provided an overview of the strategy and work involved in marketing programs and offers. In that presentation, staff introduced a common industry model, the traditional sales and marketing funnel (illustrated below). In this presentation, staff clarified the difference between Energy Trust's residential and business marketing by the level of investment needed to engage potential customers in program offers. As seen below, residential marketing needs to carry a customer further to the decision to act than business marketing, where program delivery or contractor engagement comes earlier in the process.



During this presentation staff presented examples of two types of marketing interventions: those designed to encourage immediate engagement in Energy Trust offers, and those designed to generate broader awareness of Energy Trust so that when customers decide to engage in the future they know where to turn. Energy Trust benefits from awareness of our offers when customers have an immediate need, such as when they are replacing broken equipment.

Staff also described the iterative process of marketing, which leverages feedback from customers to understand if the marketing approach is achieving the desired result. Market research, including surveys, interviews and focus groups, is an important tool to learn about customer behavior and decision-making, and then apply the appropriate marketing messages and strategies to drive program activity.

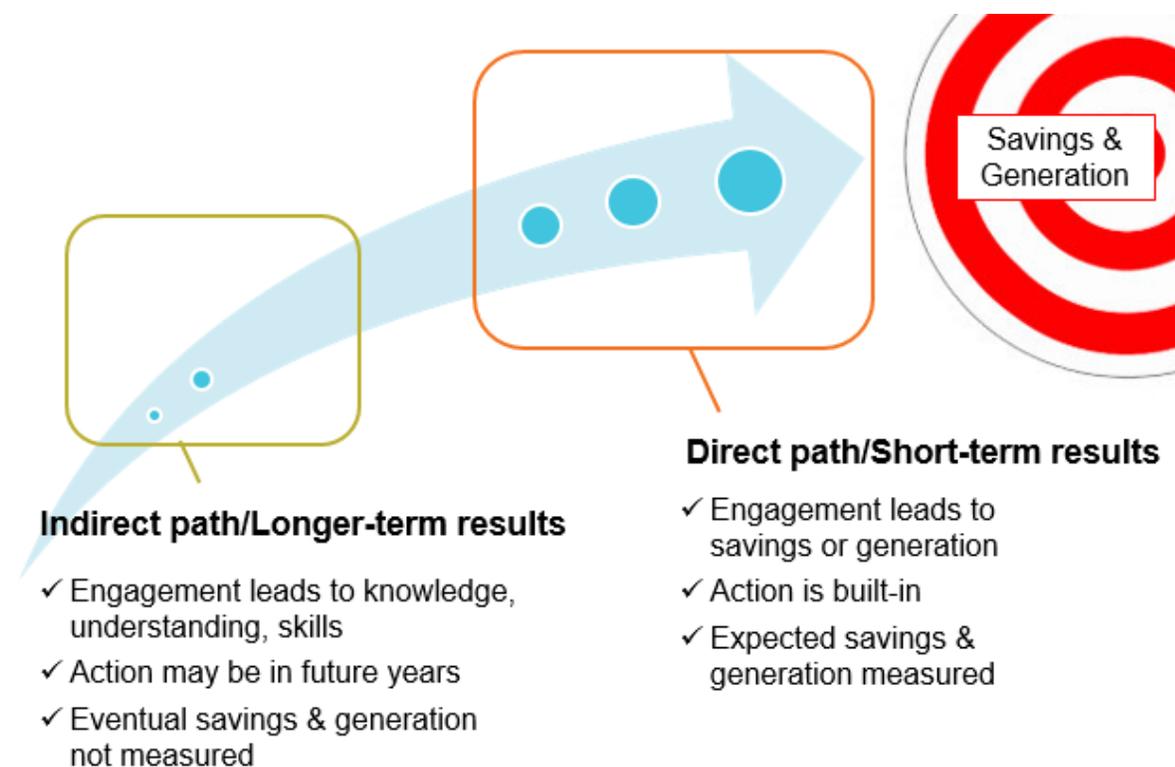
Market Feedback and Response



In a 2016 Board Workshop presentation, staff covered educational activities undertaken by Energy Trust at that time, primarily as components of programs designed to deliver savings in the short-term, and the possibility to expand educational efforts leading to

broader participation in energy measures over time. This presentation came at a time when Energy Trust was considering how to maintain and expand customer engagement in its programs as some education-related measures and services were ending and other measures were moving upstream. The discussion question for the board at that time was whether Energy Trust should consider a higher level of investment in educational efforts that have a longer path to energy savings. The board expressed interest in educational activities and asked the staff to consider how the effectiveness of such investments might be measured, and how to balance the benefit of customer education against the administrative costs. Additional board feedback from this Workshop is included in Section III below.

Education as a Long-term Investment in Program Engagement



The remainder of this paper provides some foundational information about marketing and education to support general board understanding, an update on our work in the

areas of awareness and education since these board presentations, and key considerations for the board over the next strategic plan period.

I. Awareness and Education – Definitions and Guidance

A. What is Marketing?

Marketing is defined by the [American Marketing Association](#) as "the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large."ⁱ

Marketing at Energy Trust is primarily the presentation of an offer to receive a service or cash incentive presented through a number of channels, including contractors, program staff, advertising, social media, website, public relations, or partner communications, such as an utility bill insert. Marketing often delivers information, including educational content, which supports a customer's understanding of the offer and its benefits and costs.

B. What is Awareness?

Awareness is knowledge or perception of a situation or fact, and sometimes a broader education process is required to obtain that knowledge. According to the American Marketing Association, "awareness (cognition) may be of the product generally, its brand, and one or more of its attributes."ⁱⁱ Brand awareness is often considered to be a prerequisite of consumers' buying decision. Brand awareness can also influence consumers' perceived risk assessment and their confidence in the purchase decision, due to familiarity with the brand and its characteristics.ⁱⁱⁱ

C. What is Education?

Education is a purposeful, designed intervention that provides information about a particular subject and develops a body of knowledge on that subject. While it may lead to other objectives, the core objective of education is to build knowledge, understanding and skills.

Three types of knowledge can be gained from education, and various combinations of each are needed to drive action, depending on the customer group.

- General knowledge or information about a topic (*the what*)
- Knowledge that increases awareness of a problem or challenge (*the why*)
- Knowledge that increases skills (*the how*)^{iv}

Education can also reinforce the importance of a behavior and promote a person's belief that their behavior will have an impact. Education is a key input for changing consumer behavior in contexts such as healthcare, financial literacy, and employment.

C. What type of Education in Marketing Motivates Action?

Below is an example of a marketing campaign that leveraged education to drive behavior change. As a broad campaign, awareness of the Orlando Utilities Commission was likely another outcome of the campaign.

Orlando Utilities Commission (OUC) “Summer of 78” campaign^v

This advertising campaign educated customers on the ideal thermostat setting for summer cooling. It ran in 2016 to combat high utility bills in the summer. The campaign stretched over nine weeks and included radio spots, digital banners, a dedicated landing page, digital billboards, and social media. To further supplement the reach of the campaign, OUC attended and provided campaign content at an Hispanic community event. The utility created a mini summer environment at the event with giveaways including lemonade, OUC branded rubber ducks, and sunscreen with savings tips attached. The campaign's web site landing page got the most page views for any OUC campaign.



D. Guidance on Best Practice

A scan of current literature on the topic of education and awareness, along with Energy Trust staff experience, offers the following guidance and suggestion for successful approaches to leverage education in marketing campaigns.

- 1) **Tailored information.** For education to increase awareness, it must provide a better understanding of how the information personally relates to the audience. Information should be tailored to the individual and their community and should include a focus on the knowledge, skills and tools needed to create change.^{vi}
- 2) **Address barriers and tap into motivations.** Effective education and awareness campaigns help customers remove barriers to participation and tap into what motivates them. Below are barriers and motivations drawn from past Energy Trust research and other academic studies.

Barriers	Motivations
<ul style="list-style-type: none"> • Lack of time • Lack of money • Lack of information • Lack of engagement • Lack of proper technology 	<ul style="list-style-type: none"> • Immediate need for repair/improvement • Saving money/improving bottom line • Increasing comfort • Improving home/business value • Improving the environment

3) **Detail skills and resources necessary to make the change.** Awareness and education campaigns should be focused not only on the facts and information, but also the detailed skills and resources necessary to make the change—the *how* to go with the *what* and *why*. By showing why the change is important and how it can be accomplished, Energy Trust will help customers believe in their ability to accomplish a task and increase confidence.

4) **Connect to broader benefits and values.** Awareness-focused education should be centered around benefits to the individual, the community, and the environment. For example, the Oregon Values and Beliefs project stated that Oregonians value the environment (including clean air and water)—57 percent believe the environment should be given priority, even at the risk of slowing economic growth.^{vii} We have learned through our own awareness research that this concern for the environment varies by region. For instance, those in Eastern Oregon and the metro Portland area are more likely to be motivated by environmental benefits, while those in southern Oregon are more interested in saving money. Aligning marketing messages with broader values and beliefs can more quickly translate to action.

II. Awareness and Education – Energy Trust’s past, present and future

A. Education in Energy Trust Marketing and Programs

In a presentation to the board in 2016, Energy Trust staff brought a sample of existing, and past, educational efforts. These efforts are primarily delivered by programs and directly affect savings in a current year or the near future. Below are examples of past or current efforts along with the program that delivers it, where existing efforts are indicated by an asterisk.

Community or partner driven

- School-based curriculum developed with and delivered by external parties (Residential)
- Kill-a-watt energy monitors available for check-out in libraries* (General)
- Community energy planning and projects* (General)
- Onsite energy kiosks or monitors that show project savings or generation* (General)

Online tools

- Energy Payback Estimator – online tool for residential customers to estimate payback for certain measures* (Residential)
- Lighting Calculator and Lighting Wheel – tool to estimate savings from business lighting installations and online residential tool to guide bulb purchase* (Business and Residential)
- Web content – information on Energy Trust website that provides context and background beyond direct services or offers; builds knowledge or understanding* (All programs and General)

Events

- Employer energy fairs – on-site employer engagement by Energy Trust with employees, typically to promote residential offers* (Business)
- Fix-it Fairs – City of Portland engagement of residents in ways to save energy and money* (General)

- Zoo teens engagement and Zoo lights – past effort by Zoo teens to engage attendees at seasonal Zoo lights and generate awareness of Energy Trust offers (General)

Within program design and delivery

- Home Energy Review – a review of energy-efficiency opportunities in a home, available on-line* (Residential)
- SEM curriculum – Strategic Energy Management is a core behavioral element of industrial sector savings and a growing element of commercial sector savings* (Business)
- Home Energy IQ – this outreach tool was a training for residential customers on opportunities to save energy in homes but is no longer offered (Residential)
- Builder Operator Certification webinars, incentives - these trainings are technical and offered through the commercial and industrial sectors* (Commercial)
- Home energy scoring, EPS – EPS is Energy Trust’s home score offered in new homes* (Residential)
- LivingWise kits for school classrooms – these kits came with a sixth grade math and science curriculum, as well as energy-saving products to install in the home, but is no longer offered (Residential)
- Training for Trade allies and Real Estate Allies, Home Inspectors – trainings to build a network of contractors able to successfully engage customers in offers* (All programs)

B. Research on Possible Expansion of Education Efforts

The 2016 conversation with the Board informed two research efforts to further guide whether, and how, Energy Trust might invest in educational activities that raise Oregonians’ awareness and knowledge of energy efficiency and renewable energy, and help the organization achieve its goals in the long term. Additional market research has also been conducted that has further broadened our understanding of customers, their behaviors and approach to decision-making.

Grounded Research

Energy Trust contracted with Grounded Research and Consulting in 2016 to conduct a scan of educational efforts in other states. The research purpose was to help staff identify education opportunities with the greatest potential, in terms of primary audience and tools for raising awareness and impacting savings and generation over time. The research focused on educational efforts implemented in communities, K-12 schools, and on the web. The researchers identified the benefits and drawbacks of each approach. The common drawbacks across each were the limited ability to track effectiveness and need for ongoing staff resource.

The three approaches were defined as follows:

- **Community-based Engagement** – Programs that generally work with existing community organizations or community leaders to educate a wide range of customers on energy efficiency or renewables. This type of program actively looks for and educates the targeted audience.
- **K-12 Engagement** – Programs that target students in one or several K-12 grade levels with a secondary audience of the students' families. This type of program actively recruits schools to bring forward education specific to energy efficiency and/or renewables.
- **Customer Engagement via Web** – Inclusion of educational content and materials on a website, or a website designed specifically to deliver an educational experience. This activity includes various ways to educate the customer on multiple topics related to programs on energy efficiency or renewables. (For Energy Trust, this type of engagement would require expansion of the current website, which currently includes only a small amount of educational content.)

Overall, the researchers had the following findings for education efforts deployed through communities, K-12 and on the web:

- Community-based engagement may be the most effective option for driving participation.
- Community-based engagement may be the best option for reaching diverse audiences because they can leverage existing networks of community-based organizations that work with diverse audience, but K-12 efforts can also be used to target these groups.

- K-12 engagement is the most likely to document its effectiveness at improving customer readiness because it can be structured as a traditional educational effort; however, it is limited to families with children and often just to families with children in grade school, as grades 4-6 are typically the focus of K-12 programs.
- Customer engagement via website is a good option for reaching many customers simply because of the ubiquitous aspect of people accessing the internet, and efforts are available to new audiences.

Customer Insights Study

Energy Trust conducted a Customer Insights study in 2016 and 2017 as part of its market research efforts. The study is designed to measure awareness and attitudes over time and provide insights each year based on organizational need. In those two years, the study was used to gauge the energy knowledge of both participants and non-participants, as well as attempt to understand whether a connection can be made between knowledge of the impacts of energy use and actions to reduce energy use. In addition, some findings revealed a different way of consuming media, and learning about new opportunities, among certain groups.

Key findings related to education and awareness from this research:

- Customers were most interested in how they could save money, and where they might be wasting energy.
- Participants and non-participants who recalled learning about energy use and saving energy in school, compared to those who did not, were significantly more likely to pay attention to their energy use and to have talked to their friends and neighbors about saving energy.
- Both participants and non-participants most frequently said they turn to online sources if they want to learn more about energy efficiency and home improvements, but a notable proportion of both groups – 21 percent of participants and 29 percent of non-participants – reported they do not know who to turn to for information on how to save energy at home.

These findings indicated a gap in education for some customers, and that further information on the benefits of energy efficiency would be helpful. Those with household incomes between \$50k and \$150k were more likely to be aware of Energy Trust offers, and those with household incomes below that were more likely to learn about Energy Trust via word of mouth.

C. Expansion of Educational Efforts

Since this topic was last discussed with the board, Energy Trust has continued to make some modest investments in education efforts designed to drive to program engagement over time (as opposed to the types of program efforts listed on pages 10-11, which are justified on the basis of savings within the annual time frame), primarily by expanding existing efforts or approaches. Below are three examples of additional work in education across the dimensions explored in the Grounded Research, community, K-12 and web-based efforts.

Community Education & Engagement

In 2017 and 2018, Energy Trust increased sponsorship funding for Sustainable Northwest and municipalities to support community education and engagement efforts in rural communities able to champion energy efforts. This investment expanded the “Making Energy Work for Rural Oregon” workshop series offered to four communities in Energy Trust territory in 2015-2016. This recent investment went deeper to help them identify and initiate municipal projects or community engagement efforts, continue RARE (Resource Assistance for Rural Environments) intern placements for a second year, and engaged additional communities.

K-12 Engagement

Students, staff and families valued LivingWise Kits, a 6th grade in-class and take-home energy efficiency curriculum and kit previously provided by Energy Trust, which generated awareness about energy efficiency and renewable energy, energy saving products and behavior strategies, and positioned Energy Trust as a credible organization and expert resource. LivingWise Kits were discontinued mid-2017, eliminating an early opportunity for shaping future thinking about energy use among youth and their families. In Fall 2017, Energy Trust staff engaged in a Lean Start-up project to explore the energy curriculum interests of local

teachers, and researched school engagement and educational curriculum options to identify potential offers to make available to teachers.

A kit developed by the NEED (National Energy Education Development) Project included energy use and energy efficiency education components that engage students and raise the energy IQ of Oregonians. As part of a small field test in the 2017-2018 school year, Energy Trust offered these kits to teachers who expressed a keen interest in continuing to use an energy curriculum supplied by Energy Trust. Feedback on the kits has been generally favorable among the small sample of teachers, but the expansion and management of such an offer would require more significant dedicated staff or contractor resources, education and relationship building.

Informational Content via Web

Energy Trust currently has low-cost, no-cost tips on the website, as well as information on the impact of energy efficiency in Oregon. Recent focus group research indicated that those with lower educational attainment and moderate income were more likely to learn through word of mouth, seek advice on energy costs from friends and family, and perform do-it-yourself (DIY) projects to save money. In addition, outreach efforts have surfaced a need for simple communication tools to help customers understand the impact and value of energy efficiency and renewable energy development. Based on this information, a segmented advertising campaign featuring short educational messages has been developed in 2018 to reach a variety of audiences and drive new visitors to pages on our website, including low-cost, no-cost tips, the annual report, a video on our overall impact, and a listing of our offers. The campaign will launch in July 2018, and an image from the DIY component of the campaign is below.



The first round of the campaign will test channels and content, using online targeting tools. The data collected from visitor response to existing content on the website will help build further content packaged specifically as educational/informational content. Potential online customer tools, blog and social media posts, and related printed materials will be considered for use in general outreach activities. Training would be needed for call center staff on the new content and best practices for handling inquiries that are not about specific program or incentive offers. This work could also be done by an external contractor that specializes in this type of educational content.

III. Planning for the Future – Considerations for Energy Trust

A. Potential to Invest in long-term Awareness and Education Activities

Recent research points to the effectiveness of awareness and education as a driver of future action. Energy Trust has consistently leveraged educational content as an approach for driving program activity, and sees value in further expansion. The upcoming campaign, described above, will apply research learnings, and could provide additional insights to guide this work.

As we identify customer groups in need of information and more community groups that show motivation but require additional engagement, there will be greater interest in education as an engagement tool. Data analysis conducted as part of the Diversity, Equity and Inclusion Initiative may also identify areas of Energy Trust's service territory that could be targeted for

greater outreach due to lagging participation. The opportunities above represent example investments. Any new activities would be ramped up slowly and evaluated on an ongoing basis.

B. How does Energy Trust Measure Impact of Awareness and Education Strategies?

Evaluating marketing efforts that do not result in immediate, attributable engagement in programs can prove difficult. Evaluation approaches for educational efforts should be considered at the front-end. Energy Trust could consider measuring the effectiveness of these efforts beyond acquisition of energy savings and generation, using the following metrics:

- Increased awareness among both participants and non-participants as measured by the annual Customer Insights study
- Increased engagement on the website, through site visits, time on site, bounce rates, and completion of engagement activities such as the online Home Energy Review
- Specific actions taken that can be attributed to the educational content, such as viewing a video or requesting certain information

C. Key Questions and Next Steps

Energy Trust's mission, vision, values and annual energy savings and generation goals will drive our awareness and education goals. When this topic was last presented to the board, board members indicated cautious support for further exploration of educational programming, and provided the following feedback to guide staff consideration of expansion in this area:

- Make sure educational efforts are aligned with the Diversity, Equity and Inclusion Initiative objectives and outcomes
- Seek partnerships and collaborate to help us reach under-engaged customer segments
 - Identify specific goals and determine where to focus educational approaches; board members suggested or responded positively to:
 - Leveraging public interest in climate and resiliency issues
 - Engaging youth who are shaping household purchasing and will be future consumers
 - Expanding current offers or collaborations with community colleges

- Expanding activities that support consumer understanding in a complex marketplace

The following key questions will be considered as Energy Trust staff explore expanding education and awareness activities:

1. What is the appropriate level of investment in these approaches?
2. How can education and awareness specifically advance Energy Trust's Diversity, Equity and Inclusion Initiative and other strategic goals and values?
3. What are priority metrics for success? How would these efforts be evaluated?
4. What opportunities exist for collaboration or partnership?

ⁱ From American Marketing Association – Retrieved from

<https://www.ama.org/AboutAMA/Pages/Definition-of-Marketing.aspx>

ⁱⁱ From American Marketing Association - Retrieved from <http://marketing-dictionary.org/ama>

ⁱⁱⁱ The Importance of Brand Awareness in Consumers' Buying Decision and Perceived Risk Assessment, Ovidiu Ioan Moiescu, Retrieved from <https://www.ceeol.com/search/article-detail?id=233682>

^{iv} Arlinghaus, K., & Johnston, C. (2018). Advocating for Behavior Change With Education. *American Journal of Lifestyle Medicine*, 12(2), 113-116.

^v ESource – 2017 Marketing Awards - OUC Campaign (Material not publicly available)

^{vi} Arlinghaus, K., & Johnston, C. (2018). Advocating for Behavior Change With Education. *American Journal of Lifestyle Medicine*, 12(2), 113-116.

^{vii} Oregon Values & Beliefs Project (2018). From the 2013 Oregon Values & Beliefs Surveys. Retrieved from <http://oregonvaluesproject.org/findings/top-findings/>

Tab 3

Board Decision

Authorize Three Program Delivery Contracts for the Production Efficiency Program Custom Track

July 25, 2018

Summary

Energy Trust staff request board approval to negotiate and execute the following contracts to deliver Custom and Strategic Energy Management (SEM) services:

- Program Delivery Contract, Territory 1: Cascade Energy, Inc.
- Program Delivery Contract, Territory 2: Energy 350, Inc.
- Program Delivery Contract, Territory 3: RHT Energy, Inc.

The contract term for each contract would be for three years with two optional one-year extensions. The total term for any individual contract would not exceed five years.

Background—Production Efficiency Program

The Custom track of the Production Efficiency program targets customers of all sizes and types with a broad range of customized services and incentives, including capital projects, operations and maintenance and SEM. While the program is managed in-house, program delivery contractors (PDCs) historically have provided account management, project development and technical expertise. In support of the Production Efficiency program, Energy Trust also currently contracts directly with a pool of SEM contractors to deliver SEM coaching and modeling services to customers, as well as a pool of allied technical assistance contractors (ATACs) for completing technical analysis studies for assessing potential projects. Custom and SEM offerings currently generate just over 50 percent of electric savings and 70 percent of natural gas savings for the Production Efficiency program, at about 55 percent of the total program cost.

The current PDCs, Energy 350, RHT Energy and Portland General Electric-Customer Technical Services, were selected as the result of a solicitation for Custom track PDCs conducted in 2013 for delivery starting in 2014 and concluding December 31, 2018.

To meet the market's needs, and to address an increasing reliance on smaller projects to achieve energy-saving goals, Energy Trust is restructuring the program beginning in 2019 to combine the delivery of Custom and SEM into the selected Custom PDCs scope of work for each territory. These Custom PDCs will now be responsible for delivery of Custom capital and operations and maintenance offerings, including the completion of technical analysis studies for program participants, either in-house or through PDC subcontractors, and for the delivery of SEM, including the development of energy intensity models. Beginning in 2019, Energy Trust will no longer maintain pools of Production Efficiency program SEM contractors or ATACs. Through this redesign, Energy Trust expects to:

- Achieve delivery and operational efficiencies to maintain cost-effective savings;
- Gain greater flexibility to respond to market opportunities;
- Engage and maintain more participation from underserved businesses, which includes: small- to medium-sized, minority- and women-owned businesses and businesses located in rural or low- to moderate-income areas; and

- Reduce the number of contractors serving individual sites to streamline customer touch points and communications and to enhance the customer experience.

Also new in 2019, PDCs will have increased responsibility for application processing and direct project data entry into the Energy Trust Project Tracker and Customer Relationship Management systems, as well as increased ownership of the program's forecasting mechanism.

2018 Production Efficiency Program RFP

- In March 2018, staff issued a request for proposals (RFP) for three PDCs to deliver Custom and SEM services for the Production Efficiency program across the program's three designated geographic territories, as illustrated in **Appendix A**.
 - Respondents could bid on all three geographic territories, but no one respondent would be awarded more than one territory as the prime contractor. Respondents were allowed and encouraged to team with other firms to provide a complete package of services.
- The RFP resulted in 10 intents to respond.
- Energy Trust hosted a webinar to discuss the RFP in detail and posted written responses to questions received from potential respondents.
- Energy Trust received seven proposals in total, with two of the proposals bidding on multiple territories.
 - This resulted in four proposals for Territory 1, four proposals for Territory 2 and two proposals for Territory 3.
- The following RFP review process was followed:
 - Staff completed a pre-qualification evaluation of all proposals for completeness and adherence to financial, legal and minimum requirements. All proposals passed this stage.
 - A review team comprised of 12 Energy Trust staff and two external reviewers:
 - Provided a preliminary score based upon review of the seven written proposals
 - Posed questions to the six finalists selected for interviews
 - Interviewed respondents with a common interview format
 - Conducted follow-up discussions, requested additional information from respondents, when necessary, and updated scoring
 - Made a final internal recommendation
- Budgeting and savings:
 - For the purpose of managing a competitive RFP solicitation, staff provided respondents with 2019 savings targets (81,000,000 kWh and almost 960,000 therms), based on the best available information at the time of RFP release.
 - The proposed PDC delivery budgets for the selected bidders are expected to total approximately \$8.3 million for contracted management and delivery services in 2019, which is subject to board approval during the 2019 annual budget process.
 - Staff estimate a 2018 transition budget impact of approximately \$350,000 across the PDC contracts.

Discussion

Cascade Energy, Energy 350 and RHT Energy received the top scores in their respective territories and were scored highest overall in the competition. All three firms presented strong proposals with clear strategies to achieve savings, technical expertise to deliver deeper savings at sites that have participated for many years, ability to reach diverse and underserved customers, strong operational management, cost-competitive pricing and new ideas to evolve the program for the future.

Reviewers also identified key strengths of the individual proposals below.

Strengths of the Cascade Energy proposal for Territory 1 included:

- Strong industrial expertise to drive deeper savings in Territory 1.
- Demonstrated regional and national success in delivering industrial energy-efficiency programs.
- Strong SEM experience and skill-set as long-time SEM coaches for the Production Efficiency program and collaborators in helping to develop the program's current SEM offerings.
- Demonstrated drive, experience and ideas for helping Energy Trust evolve the program to meet changing market conditions.

Strengths of the Energy 350 proposal for Territory 2 included:

- Experience and demonstrated success delivering PDC services for the Production Efficiency program from 2014 through 2018.
- Strong set of technical account managers and engineering staff who communicate well with customers and deliver high-caliber technical studies and projects.
- In-house delivery for nearly all outreach, technical and SEM services that should yield program cost-savings and streamlined project implementation and customer communications.
- An innovative culture that gives Energy Trust a strong partner in helping to evolve the program.

Strengths of the RHT proposal for Territory 3 included:

- Experience and demonstrated success delivering PDC services for the Production Efficiency program from 2003 through 2018.
- Maintenance of strong customer relationships and trust that has been developed over many years in Territory 3.
- Staff with an intimate knowledge of the territory as long-time residents of the territory.
- Selection of an experienced, proven SEM coaching subcontractor to deliver high-quality SEM services to customers.

Recommendations

Authorize staff to negotiate and sign a new **Production Efficiency Custom Program Delivery Contract with Cascade Energy, Inc.** for a three-year term with potential for two one-year performance-based extensions and a total contract term not to exceed five years. If the board approves this recommendation, staff will provide notice to the OPUC that Energy Trust is entering into this agreement.

Authorize staff to negotiate and sign a new **Production Efficiency Custom Program Delivery Contract with Energy 350, Inc.** for a three-year term with potential for two one-year performance-based extensions and a total contract term not to exceed five years. If the board approves this recommendation, staff will provide notice to the OPUC that Energy Trust is entering into this agreement.

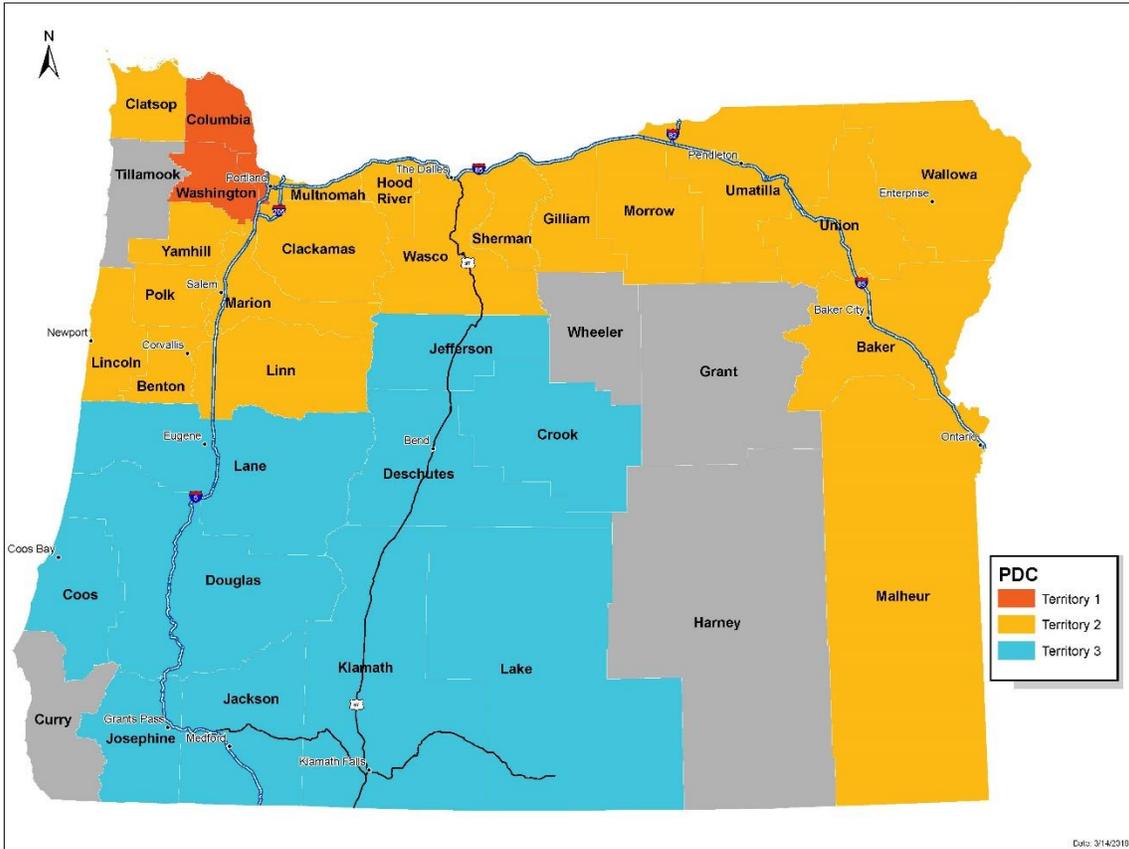
Authorize staff to negotiate and sign a new **Production Efficiency Custom Program Delivery Contract with RHT Energy, Inc.** for a three-year term with potential for two one-year performance-based extensions and a total contract term not to exceed five years. If the board approves this recommendation, staff will provide notice to the OPUC that Energy Trust is entering into this agreement.

Appendix A: Production Efficiency Territory Map (as designated in the RFP)



Production Efficiency Program Delivery Contractor (PDC) Territories

1.866.202.0576
production@energytrust.org



**RESOLUTION 844
 AUTHORIZE A PROGRAM DELIVERY CONTRACT WITH CASCADE
 ENERGY, INC. FOR THE PRODUCTION EFFICIENCY PROGRAM
 CUSTOM TRACK—TERRITORY 1**

WHEREAS:

1. With the assistance of outside expertise, Energy Trust staff has conducted a fair and open procurement process to select three Program Delivery Contractors to manage and deliver Production Efficiency program services for the next three to five years.
2. Cascade Energy, Inc. was selected to deliver Production Efficiency Custom Track Program Delivery Contractor services for the program’s designated Territory 1.
3. Staff has assumed and estimated a total first-year custom Territory 1 program budget for 2019 of approximately \$5.7 million, which includes approximately \$2.55 million in total contracted program delivery and \$3.15 million in first-year incentives.
4. Actual savings and costs will be reviewed by the Energy Trust board as part of the annual budget and action plan process. Based on current assumptions, staff estimates the following program savings and costs per unit savings:

	Electric	Gas
Savings	25 million kWh	250,000 therms
\$/Unit Savings	\$0.211 per kWh	\$1.62 per therm

It is therefore RESOLVED:

1. Subject to determination of a final contract amount based on the board-approved 2019 budget, the executive director or his designee is authorized to enter into a contract with Cascade Energy, Inc. to be Production Efficiency Custom Track Program Delivery Contractor for Territory 1 for an initial term from January 1, 2019, through December 31, 2021.
2. First-year contract costs and savings goals included in the contract shall be consistent with the board-approved 2019 Production Efficiency budget and two-year action plan. Thereafter, the contract may be amended consistent with the board's annual budget and action plan decisions and the executive director or his designee is authorized to sign any such contract amendments.
3. The final contract may include a provision allowing staff to offer one-year extensions beyond the initial term if the Program Delivery Contractor meets certain established performance criteria. In no event would the total term of the contract plus extensions exceed five years.
4. Before extending this contract beyond the initial term, staff will report to the board on the Program Delivery Contractor’s progress and staff recommendation for any additional extension time periods. If the board does not object to extension, contract terms would remain as approved in the most recent action plans, budgets and contract at the time of extension, and the executive director or his designee is authorized to sign any such contract extensions.

Moved by:
 Vote: In favor:
 Opposed:

Seconded by:
 Abstained:

**RESOLUTION 845
 AUTHORIZE A PROGRAM DELIVERY CONTRACT WITH ENERGY 350,
 INC. FOR THE PRODUCTION EFFICIENCY PROGRAM CUSTOM
 TRACK—TERRITORY 2**

WHEREAS:

1. With the assistance of outside expertise, Energy Trust staff has conducted a fair and open procurement process to select three Program Delivery Contractors to manage and deliver Production Efficiency program services for the next three to five years.
2. Energy 350, Inc. was selected to deliver Production Efficiency Custom Track Program Delivery Contractor services for the program’s designated Territory 2.
3. Staff has assumed and estimated a total first-year custom Territory 2 program budget for 2019 of approximately \$8.5 million, which includes approximately \$3.5 million in total contracted program delivery and \$5 million in first-year incentives.
4. Actual savings and costs will be reviewed by the Energy Trust board as part of the annual budget and action plan process. Based on current assumptions, staff estimates the following program savings and costs per unit savings:

	Electric	Gas
Savings	37 million kWh	455,000 therms
\$/Unit Savings	\$0.206 per kWh	\$1.99 per therm

It is therefore RESOLVED:

1. Subject to determination of a final contract amount based on the board-approved 2019 budget, the executive director or his designee is authorized to enter into a contract with Energy 350, Inc. to be Production Efficiency Custom Track Program Delivery Contractor for Territory 2 for an initial term from January 1, 2019, through December 31, 2021.
2. First-year contract costs and savings goals included in the contract shall be consistent with the board-approved 2019 Production Efficiency budget and two-year action plan. Thereafter, the contract may be amended consistent with the board's annual budget and action plan decisions and the executive director or his designee is authorized to sign any such contract amendments.
3. The final contract may include a provision allowing staff to offer one-year extensions beyond the initial term if the Program Delivery Contractor meets certain established performance criteria. In no event would the total term of the contract plus extensions exceed five years.
4. Before extending this contract beyond the initial term, staff will report to the board on the Program Delivery Contractor’s progress and staff recommendation for any additional extension time periods. If the board does not object to extension, contract terms would remain as approved in the most recent action plans, budgets and contract at the time of extension, and the executive director or his designee is authorized to sign any such contract extensions.

Moved by:

Seconded by:

Vote: In favor:

Abstained:

Opposed:

**RESOLUTION 846
 AUTHORIZE A PROGRAM DELIVERY CONTRACT WITH RHT
 ENERGY, INC. FOR THE PRODUCTION EFFICIENCY PROGRAM
 CUSTOM TRACK—TERRITORY 3**

WHEREAS:

1. With the assistance of outside expertise, Energy Trust staff has conducted a fair and open procurement process to select three Program Delivery Contractors to manage and deliver Production Efficiency program services for the next three to five years.
2. RHT Energy, Inc. was selected to deliver Production Efficiency Custom Track Program Delivery Contractor services for the program’s designated Territory 3.
3. Staff has assumed and estimated a total first-year custom Territory 3 program budget for 2019 of approximately \$4.15 million, which includes approximately \$2.25 million in total contracted program delivery and \$1.9 million in first-year incentives.
4. Actual savings and costs will be reviewed by the Energy Trust board as part of the annual budget and action plan process. Based on current assumptions, staff estimates the following program savings and costs per unit savings:

	Electric	Gas
Savings	19 million kWh	253,000 therms
\$/Unit Savings	\$0.188 per kWh	\$2.29 per therm

It is therefore RESOLVED:

1. Subject to determination of a final contract amount based on the board-approved 2019 budget, the executive director or his designee is authorized to enter into a contract with RHT Energy, Inc. to be Production Efficiency Custom Track Program Delivery Contractor for Territory 3 for an initial term from January 1, 2019, through December 31, 2021.
2. First-year contract costs and savings goals included in the contract shall be consistent with the board-approved 2019 Production Efficiency budget and two-year action plan. Thereafter, the contract may be amended consistent with the board's annual budget and action plan decisions and the executive director or his designee is authorized to sign any such contract amendments.
3. The final contract may include a provision allowing staff to offer one-year extensions beyond the initial term if the Program Delivery Contractor meets certain established performance criteria. In no event would the total term of the contract plus extensions exceed five years.
4. Before extending this contract beyond the initial term, staff will report to the board on the Program Delivery Contractor’s progress and staff recommendation for any additional extension time periods. If the board does not object to extension, contract terms would remain as approved in the most recent action plans, budgets and contract at the time of extension, and the executive director or his designee is authorized to sign any such contract extensions.

Moved by:

Seconded by:

Vote: In favor:

Abstained:

Opposed:

PINK PAPER

Board Decision

Approve Move of Board-approved 2018 Program Funding Across Sectors

July 25, 2018

Summary

Energy Trust staff request board approval to move up to \$350,000 in board-approved 2018 budgeted funds from the commercial sector to the industrial sector to support Production Efficiency Program Delivery Contractor transition activities.

Background

- Energy Trust programs operate under a not-to-exceed budget cap established by the board in the annual budget approval process or by special resolution.
- Energy Trust's Program Approval Process policy provides that Energy Trust staff may move budgeted funds from one program to another within the same program sector (residential, commercial, industrial and renewable energy) without board approval.
- Energy Trust staff desire to move funds from the commercial sector New Buildings program to the industrial sector Production Efficiency program.
- Energy Trust's board-approved 2018 budget includes \$350,000 in funding for potential Program Management Contractor transition activities related to the New Buildings Program Management Contractor solicitation issued in February 2018.
- At its June 6, 2018, meeting, the board approved Energy Trust staff recommendation to negotiate and execute an agreement with CLEAResult Consulting Inc., as the New Buildings Program Management Contractor beginning January 1, 2019. CLEAResult was the incumbent and the budgeted transition funds are not needed for New Buildings.
- Energy Trust now desires to shift up to \$350,000 from the New Buildings program 2018 budget to the Production Efficiency program. This cross-sector shift will allow Energy Trust to utilize the funds in support of Production Efficiency Custom Track Program Delivery Contractor transition activities occurring in 2018.

Discussion

- In March 2018, Energy Trust's industrial sector Production Efficiency program issued a competitive solicitation seeking three Custom track Program Delivery Contractors to deliver its Custom track, as redesigned for 2019 to include additional program operations functions as well as delivery of technical studies and industrial Strategic Energy Management.
- The selected Program Delivery Contractors will be working with Energy Trust on transition activities during September – December 2018 in preparation of assuming full delivery of the re-designed program beginning January 1, 2019.
- Staff is seeking board approval to allow staff to move across sectors up to \$350,000 of board-approved 2018 New Buildings program funds to the Production Efficiency program.

Recommendation

Authorize staff to move across sectors up to \$350,000 of board-approved 2018 New Buildings program funds to the Production Efficiency program, by adopting Resolution 847 below.

SOLUTION 847
AUTHORIZE 2018 BOARD-APPROVED PROGRAM FUNDS TO BE
MOVED ACROSS SECTORS

WHEREAS:

1. Energy Trust staff requests authorization to move up to \$350,000 of board-approved 2018 New Buildings program funds to the Production Efficiency program.
2. The funds will be used to support Production Efficiency Program Delivery Contractor transition activities in 2018.

It is therefore RESOLVED:

1. Staff is authorized by the board to move up to \$350,000 in board-approved 2018 New Buildings program funds across sectors to the industrial Production Efficiency program.

Moved by:

Seconded by:

Vote:

In favor:

Abstained:

Opposed:[list name(s) and, if requested, reason for "no" vote]

PINK PAPER

Board Briefing Paper

Manufactured Homes Replacement Loan Fund

July 25, 2018

Summary

Energy Trust launched a pilot program to facilitate the replacement of older vintage manufactured homes in July 2017. The Residential program seeks to leverage utility customer incentives alongside additional funding streams to make home replacement accessible for low- to moderate-income households. Through its work in the pilot program, Energy Trust has examined the loan products promoted by manufactured homes dealerships and determined that limited access to low-cost, fixed-rate financing is a barrier to uptake.

Staff proposes the use of funds that exceed the organizational contingency reserves target amount as a bridge strategy to assembling a capital partnership that could ultimately be less reliant on ratepayer support.

Background

Oregon has more than 170,000 manufactured homes, representing about 10 percent of the residential building stock. In some rural Oregon counties the percentage of manufactured homes is much higher. Nearly 100,000 of these homes are pre-1995 construction and were built with weak or non-existent levels of energy efficiency.

Residents in these homes live with insufficient levels of insulation in the ceiling, walls and floor; significant air leakage; and inefficient windows and heating systems. Energy loss, discomfort, poor indoor air quality and high energy costs result. Residents of manufactured homes spend about 70 percent more on energy per square foot than residents of site-built homes. These impacts disproportionately affect those with lower incomes, who already face a higher energy burden than the general population.

Retrofitting older manufactured homes with energy-efficiency measures is a partial solution, and has been a part of Energy Trust's residential program portfolio since the organization's inception. In many cases, attics and walls are usually narrow and/or inaccessible, making it difficult to increase insulation levels. In other cases, older manufactured homes are deteriorated to the point that they cannot be made more efficient. The cost and expected useful life of retrofit improvements frequently exceed the asset value.

The limitations of a piecemeal, retrofit approach are well-known in the energy efficiency industry and through Energy Trust's experience serving this housing type.

Objectives

Energy Trust's Manufactured Homes Replacement Pilot and focus on this market aim to deliver durable savings to a segment of the rural housing stock where few practical, lasting options exist.

Serving old manufactured homes has been part of the energy-efficiency dialogue for decades and the difficulty lies in reaching the customer and financing either the retrofit or replacement. Replacing older manufactured homes with energy-efficient new models produces far more energy savings than retrofitting them. It can also generate substantial additional benefits such as healthier living conditions and greater economic security.

Manufactured Homes Replacement Pilot Strategy

Energy Trust seeks to replace 50 older manufactured homes over a three-year timeframe. The new manufactured homes will meet the standards of the Northwest Energy Efficient Manufactured Home Program (NEEM). The energy-efficiency levels of a NEEM home far exceed the current federal standard. The NEEM standard accommodates either natural gas or electric-heated homes.

The goal of the pilot is to establish a replicable investment model to serve customers of all five funding utilities, and to better understand the range of costs and benefits associated with home replacement. (See **Appendix A**, Research Objectives). In addition to Craft3, Energy Trust partners in this effort include CASA of Oregon, St Vincent's De Paul of Lane County, Neighborworks Umpqua, United Community Action Network (UCAN), Multnomah County, Oregon Housing and Community Services (OHCS), Bonneville Power Administration (BPA), Network for Oregon Affordable Housing (NOAH) and Community Action Partnership of Oregon (CAPO). Energy Trust have been in regular communication with interested parties elsewhere in the Pacific Northwest and around the nation.

Craft3 Capital Partnership through an Energy Trust Direct Loan

Access to financing has proven to be a barrier to participation in manufactured homes replacement programs, in particular for owner-occupied units sited in leased-land communities¹. Building off the successful capital partnership established in support of Savings Within Reach On-bill Repayment Financing, Energy Trust has been working with Craft3 to develop a new loan product to support participants in the Manufactured Homes Replacement Pilot.

Energy Trust has previously executed two loan agreements with Craft3 in support of Savings Within Reach, for a combined sum of \$800,000. Energy Trust does not issue direct loans to customers. Energy Trust staff now propose entering into a third loan agreement with Craft3 to address a key barrier to participation in the Manufactured Homes Replacement Pilot.

Energy Trust staff proposes a direct loan agreement of \$1,000,000 to Craft3 to establish a loan fund that will support the replacement of roughly 30 units, at an expected average loan to end-borrowers of \$35,000. **Appendix B**, Example Project, provides a sample profile of a typical project contemplated under this loan program. Utilization of \$1,000,000 in funds that exceed the target amount in organizational contingency reserve funds to seed the loan fund will enable Energy Trust to deliver services as early as September 2018 while continuing to pursue additional sources of capital.

The proposed loan agreement between Craft3 and Energy Trust is largely similar to existing agreements executed for Savings Within Reach, with some modifications to account for feedback provided by utility stakeholders, and the unique characteristics of the Manufactured Homes Replacement Pilot. Key provisions of the proposed Craft3 and Energy Trust loan agreement include:

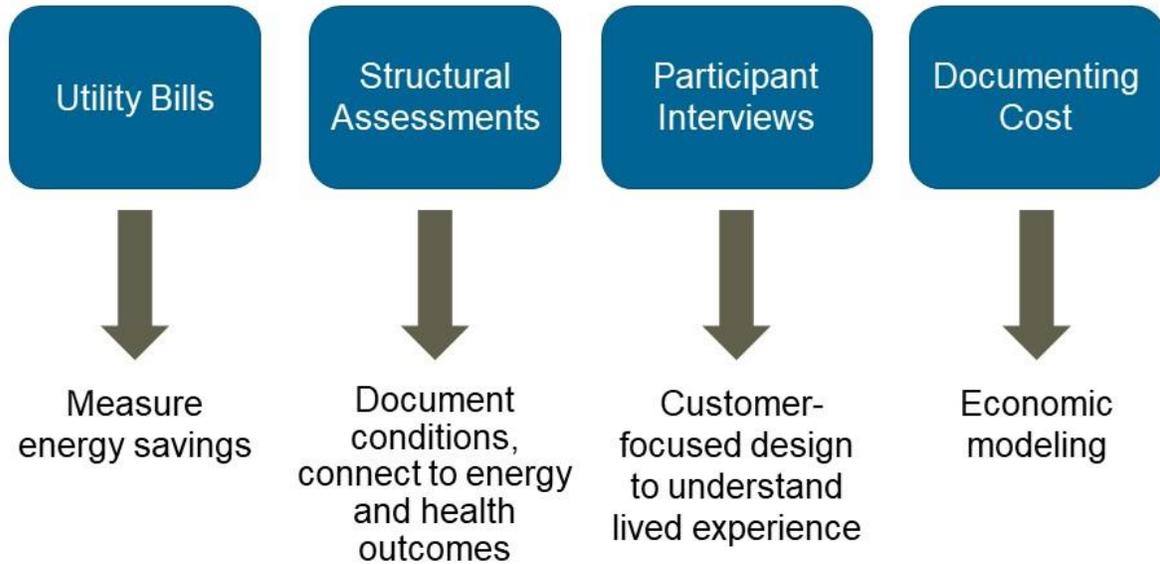
¹ A leased-land community is commonly referred to as a manufactured home park. These are communities where the resident may own the manufactured home, but leases the land upon which it is sited. Homes purchased for leased-land communities are typically financed and titled as personal property.

- \$1,000,000 term loan
- Principal disbursed in installments, installment amounts and frequency contingent upon program activity
- 15-year term to Craft3
- OPUC approved language anticipating acceleration of loan maturity, contingent upon outcome of 2025 sunset of ORS 757.600
- 1% interest rate, interest payable on a quarterly basis, assessed on funds disbursed to date
- No provisions for loan loss reserve obligation for non-payment; Energy Trust funds will not be exposed to portfolio loss

At the conclusion of the loan term, funds repaid to Energy Trust shall be redistributed to funding utilities at an agreed upon redistribution formula.

A proposed board resolution approving the use of Energy Trust reserve funds for establishment of a loan fund is attached.

Research Objectives



Appendix B: Sample Financing Project

Project		Financing	
Home decommissioning	\$8,600	Gross HH income	\$27,500
New Home	\$40,000	Monthly Income	\$2,292
Transport + Set up	\$13,000	monthly space rent	\$350
Total Project Cost	\$61,600		
		monthly debt	\$314.76
Energy Trust Incentive	(\$10,000)		
OHCS Low Income	(\$15,000)		
Loan fee	\$700		
Balance of costs	\$37,300	Housing % of income	29%

Board Decision

Using Contingency Reserves Account Organization Pool to Establish a Manufactured Homes Replacement Loan Fund with Craft3

July 25, 2018

Summary

Use up to \$1,000,000 drawn from funds that exceed the target amount for Energy Trust's contingency reserves account organization pool to establish a Manufactured Homes Replacement Loan Fund with Craft3, a not-for-profit lender.

Background and Discussion

- Energy Trust and Craft3, a Pacific Northwest focused not-for-profit lender, began working together on energy-efficiency financing in 2013 creating an on-bill repayment financing product for participants in Energy Trust's residential program. Energy Trust has previously entered into two loan agreements with Craft3 in support of Savings Within Reach for a combined total of \$800,000. Energy Trust does not issue direct loans to borrowers, and through its loan funding to Craft3, Craft3 provides financing to Energy Trust participants.
- Craft3 is a regional nonprofit that makes loans in Oregon and Washington to strengthen the resilience of businesses, families and nonprofits, including those without access to traditional financing.
- Energy Trust, with authorization from the OPUC, launched a pilot to serve manufactured homes by facilitating the replacement of older, pre-1995 manufactured homes with high-efficiency models through a combination of an Energy Trust incentive, additional grants and low-interest loans from local, nonprofit lenders. This pilot is referred to as the Manufactured Homes Replacement Pilot.
- Through its work in the Manufactured Homes Replacement Pilot, Energy Trust staff has identified that financing is a barrier to participation.
- Building off the successful work between Energy Trust and Craft3 to establish and support of On Bill Repayment Financing programs, Energy Trust has been working with Craft3 to develop a new loan product to support participants in the Manufactured Homes Replacement Pilot and address the financing barrier to participation.
- Energy Trust proposes to enter into third loan agreement with Craft3 to fund a manufactured homes replacement loan fund. To fund the loan to Craft3, Energy Trust staff is proposing using the Organization Contingency Reserves pool of Energy Trust's Contingency Reserves.
- Energy Trust's Using Reserve Accounts Policy establishes two distinct reserve accounts, the Contingency Reserves Account and the Efficiency Program Reserves Account. The "Contingency Reserves Account" is divided into two pools, an emergency contingency pool and an organization pool. Pursuant to the current Using Reserve Accounts Policy, the Efficiency Program Reserves Account is to be set on an individual utility basis as part of the annual funding negotiations.
- The Using Reserve Accounts Policy targeted a total of \$8,000,000 for the Contingency Reserves Account, with \$5,000,000 reserved for the emergency contingency pool and

the remainder, targeted for a total of \$3,000,000, reserved for the organization contingency pool.

- The organization contingency pool currently exceeds \$4,822,229. Staff recommends redirecting \$1,000,000 of those excess reserves to establish the loan fund pool described above. The Using Reserve Accounts Policy requires, among other things, Energy Trust staff to obtain board approval prior to utilizing the Contingency Reserves Account organization pool, and Energy Trust staff seek board approval for the use of reserve funds as described.

Recommendation

Authorize the use of up to \$1,000,000 from the Energy Trust Contingency Reserves Account organization pool for establishing a loan fund for financing manufactured home replacements through a loan agreement with Craft3.

**RESOLUTION 848
USING CONTINGENCY RESERVES ACCOUNT ORGANIZATION
POOL FOR ESTABLISHMENT OF A MANUFACTURED HOMES
REPLACEMENT LOAN FUND WITH CRAFT3**

WHEREAS:

- 1. Energy Trust, with authorization from the OPUC, launched a pilot to serve manufactured homes by facilitating the replacement of pre-1995 manufactured homes with high-efficiency models through a combination of an Energy Trust incentive, third-party grants and low-interest loans from local, nonprofit lenders. This pilot is referred to as the Manufactured Homes Replacement Pilot.**
- 2. Through work in the Manufactured Homes Replacement Pilot, Energy Trust staff has identified that financing is a barrier to participation.**
- 3. Building off the successful work between Energy Trust and Craft3 to establish and support of On Bill Repayment Financing programs, Energy Trust has been working with Craft3 to develop a new loan product to support participants in the Manufactured Homes Replacement Pilot and address the financing barrier to participation.**
- 4. Energy Trust proposes to enter into a third loan agreement with Craft3 to fund a manufactured homes replacement loan fund. To fund the loan to Craft3, Energy Trust staff is proposing using the Organization Contingency Reserves pool of Energy Trust's Contingency Reserves.**
- 5. Energy Trust's Using Reserve Accounts Policy requires prior board approval before utilizing the Contingency Reserves Account organization pool. Energy Trust staff recommends utilizing the organization pool for establishment of a loan fund with Craft3 for a manufactured homes replacement financing offering.**

It is therefore RESOLVED:

- 1. The Executive Director is authorized to use up to \$1,000,000 currently accounted for in the Contingency Reserves Account organization pool funds to establish a manufactured homes replacement loan fund with Craft3 (the Manufactured Homes Loan Fund); and**
- 2. Energy Trust is authorized to negotiate and enter into a 15-year revolving loan agreement with Craft3 to provide the capital for establishment of the Manufactured Homes Loan Fund, with terms and conditions that provides repayment to Energy Trust with interest, provides for termination procedures for the loan agreement resolution in the event that Energy Trust ceases operations in 2025 and otherwise provides Energy Trust ratepayer funds with sufficient protection.**

Moved by:

Seconded by:

Vote:

In favor:

Abstained:

Opposed:

Tab 4

Notes on April 2018 Financial Statements

May 30, 2018

Revenue

Public Purpose Revenue is within 2% of budget. Incremental revenue for 838 funding is about 10% above budget, primarily coming from PGE.

	<u>YTD Actual</u>	<u>YTD Budget</u>	<u>YTD Var</u>	<u>YTD %</u>	<u>PY</u>
PGE	39,286,694	36,679,836	2,606,858	7%	37,202,100
PAC	23,211,147	22,162,874	1,048,273	5%	24,239,805
NWN	11,599,744	11,351,353	248,391	2%	13,044,601
CNG	1,333,032	1,049,081	283,951	27%	1,514,923
Avista	482,029	385,623	96,406	25%	533,798
Grant Revenue	28,638		28,638	0%	
Investment Income	177,496	70,000	107,496	154%	99,958
Total	76,118,781	71,698,768	4,420,013	6%	76,635,184

Reserves

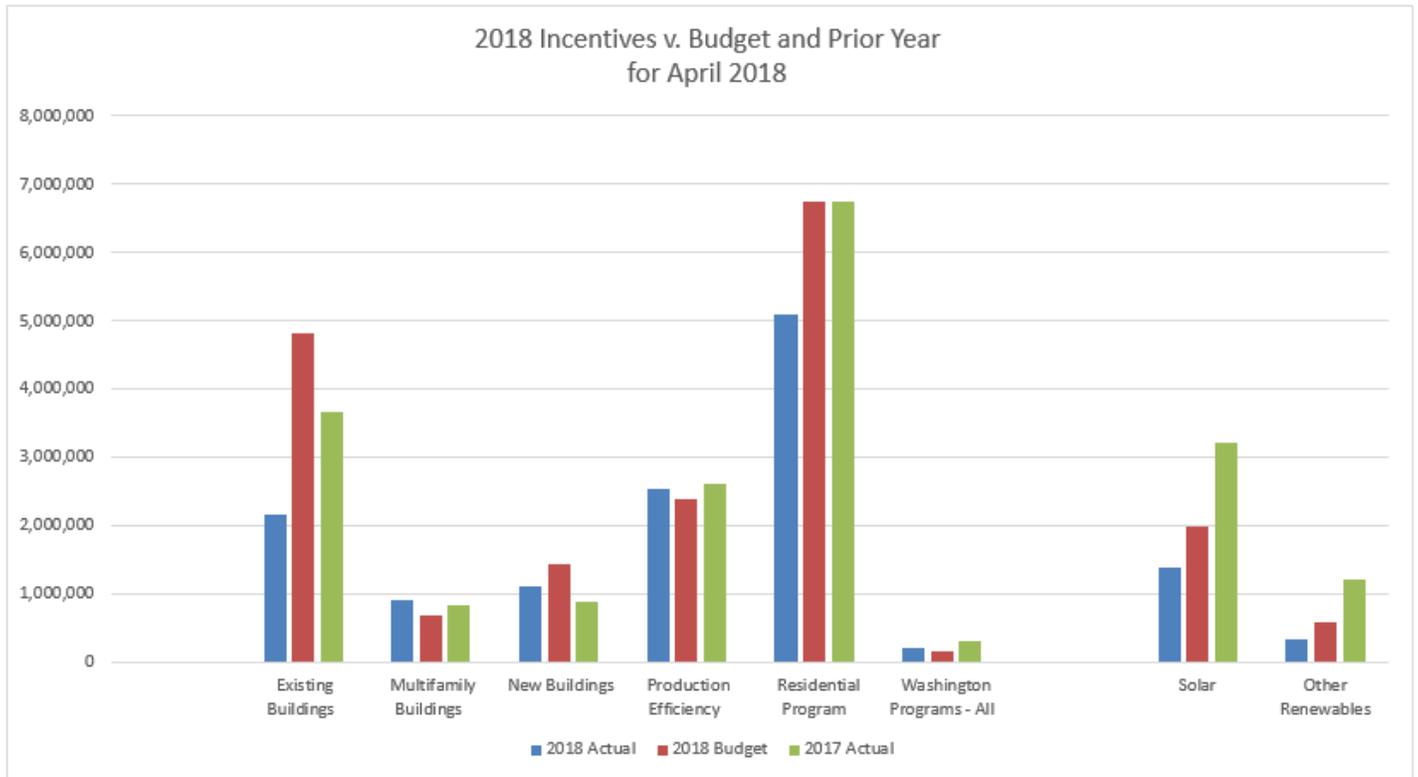
Reserves in April increased from \$77 to \$83 million. Last year at this time they were \$66 million. We don't anticipate a significant drawdown until mid-year incentives are processed in June and paid in July. Despite making an early payment in the month of April, Avista continues to exceed expectations in both savings and expenses. They are currently showing a slightly negative reserve balance that is likely to remain in May.

Reserves

	<u>4/30/18 Amount</u>	<u>Actual 12/31/17 Amount</u>	<u>% Change from Year End</u>	<u>4/30/17 Amount</u>	<u>% Change from a Year Ago</u>
PGE	28,813,831	12,210,374	136%	21,193,864	36%
PacifiCorp	15,902,058	6,211,995	156%	8,475,742	88%
NW Natural	8,732,364	3,527,721	148%	8,286,470	5%
Cascade	1,186,897	262,065		569,242	
Avista	(97,966)	75,716		409,114	
NWN Industrial	2,191,797	2,647,086	-17%	2,282,488	-4%
NWN Washington	586,216	176,503	232%	197,867	196%
PGE Renewables	8,399,015	7,073,074	19%	7,180,278	17%
PAC Renewables	7,437,835	6,268,078	19%	7,640,557	-3%
Program Reserves	73,152,047	38,452,612	90%	56,235,622	30%
Other Reserves	37,546	38,710	-	0	
Contingency Reserve	5,000,000	5,000,000	0%	5,000,000	0%
Contingency Available	4,818,805	4,641,309	4%	4,371,767	10%
Total	83,008,392	48,132,611	72%	65,607,373	27%

Expenses

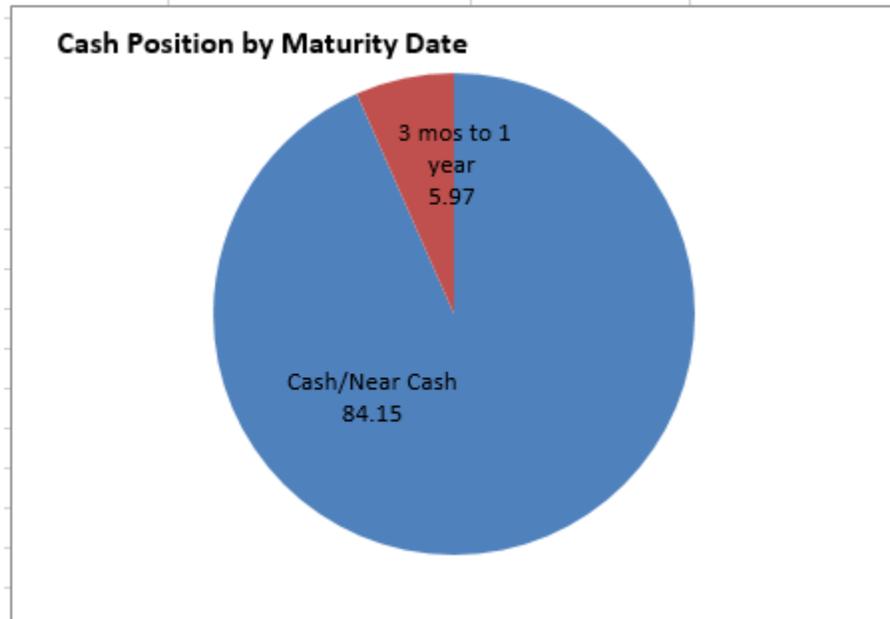
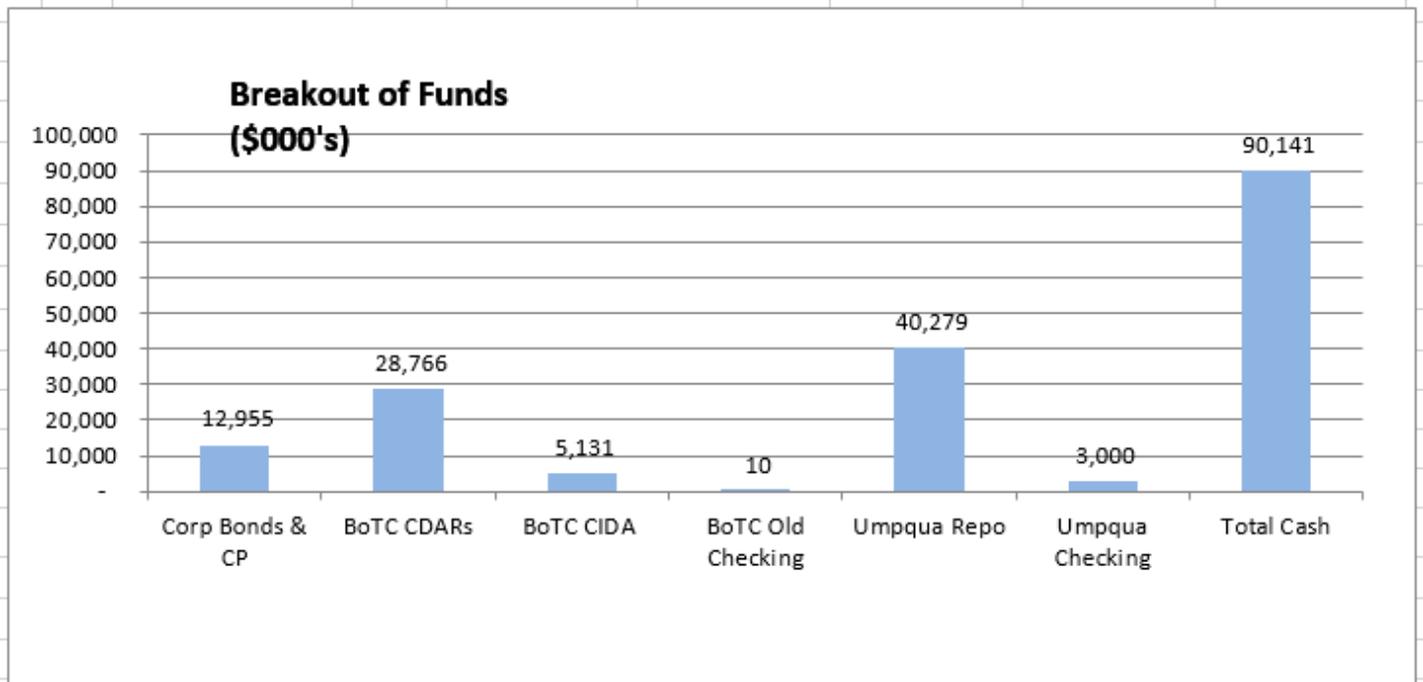
April total expenses were \$2.6 million below budget, mostly due to incentive spending coming in \$1.9 million lower than budgeted. Year to date expenses are now \$6.1 million lower than expected, due primarily to incentives (\$5.1 million). Existing Buildings continues to have a significant gap between actual and budget. Part of this is due to the timing curve used for budgeted incentives. They expect to close the gap later in the year.



Total Incentives			
Year-to-Date 2018			
	<u>2018 Actual</u>	<u>2018 Budget</u>	<u>2017 Actual</u>
Existing Buildings	2,169,496	4,806,591	3,669,757
Multifamily Buildings	912,083	687,118	837,661
New Buildings	1,118,896	1,438,989	888,362
Production Efficiency	2,534,313	2,401,337	2,614,458
Residential Program	5,083,517	6,751,726	6,741,659
Washington Programs - All	203,302	166,545	321,331
Solar	1,382,575	1,984,200	3,229,061
Other Renewables	334,582	578,983	1,207,247
Total Incentives	13,738,764	18,815,490	19,509,537
Energy Efficiency Only	12,021,607	16,252,307	15,073,228

Investment Status

The graphs below show the type of investments we hold and the locations where our funds are held. Since our year end needs were not as great as anticipated, we are investing additional funds. We placed \$4 million, and our average yield increased from .63 in March to .82 in April. We will continue to keep the timeframe of the investments relatively short.



Energy Trust of Oregon
BALANCE SHEET
April 30, 2018
(Unaudited)

	April 2018	March 2018	December 2017	April 2017	Change from one month ago	Change from Beg. of Year	Change from one year ago
Current Assets							
Cash & Cash Equivalents	55,923,690	52,085,153	52,223,904	44,957,390	3,838,537	3,699,787	10,966,300
Investments	34,121,374	30,128,823	22,721,392	27,342,154	3,992,550	11,399,981	6,779,219
Receivables	214,917	77,099	119,077	158,974	137,818	95,839	55,943
Prepaid Expenses	547,411	602,847	244,442	518,002	(55,435)	302,969	29,410
Advances to Vendors	1,511,433	2,267,137	2,489,421	1,479,305	(755,705)	(977,988)	32,127
Total Current Assets	92,318,824	85,161,060	77,798,237	74,455,826	7,157,765	14,520,588	17,862,999
Fixed Assets							
Computer Hardware and Software	3,926,210	3,733,082	3,733,082	3,696,232	193,127.80	193,127.80	229,978
Software Development in Progress	0	193,128	183,687		(193,128)	(183,687)	-
Leasehold Improvements	595,027	595,027	595,027	326,158	-	-	268,868
Office Equipment and Furniture	819,795	819,795	815,056	791,443	-	4,738.88	28,352
Total Fixed Assets	5,341,031	5,341,031	5,326,852	4,813,833	-	14,179	527,198
Less Depreciation	(4,635,984)	(4,600,359)	(4,442,925)	(3,880,116)	(35,624)	(193,058)	(755,868)
Net Fixed Assets	705,047	740,672	883,926	933,717	(35,624)	(178,879)	(228,670)
Other Assets							
Deposits	237,314	237,314	237,314	237,314	-	-	-
Deferred Compensation Asset	981,045	978,837	972,828	863,911	2,208	8,217	117,135
Note Receivable, net of allowance	430,669	430,669	263,669	263,669	-	167,000	167,000
Total Other Assets	1,649,029	1,646,821	1,473,812	1,364,894	2,208	175,217	284,135
Total Assets	94,672,901	87,548,552	80,155,975	76,754,437	7,124,349	14,516,926	17,918,463
Current Liabilities							
Accounts Payable and Accruals	8,815,113	7,788,801	29,180,745	8,691,434	1,026,312	(20,365,632)	123,680
Salaries, Taxes, & Benefits Payable	828,346	841,950	874,594	970,603	(13,604)	(46,248)	(142,256)
Total Current Liabilities	9,643,460	8,630,751	30,055,339	9,662,036	1,012,708	(20,411,879)	(18,577)
Long Term Liabilities							
Deferred Rent	1,038,714	1,026,621	990,344	615,253	12,093	48,370	423,461
Deferred Compensation Payable	981,045	978,837	976,378	867,461	2,208	4,667	113,585
Other Long-Term Liabilities	1,290	1,290	1,290	2,315	-	-	(1,025)
Total Long-Term Liabilities	2,021,049	2,006,748	1,968,012	1,485,028	14,301	53,037	536,021
Total Liabilities	11,664,509	10,637,500	32,023,351	11,147,065	1,027,009	(20,358,842)	517,444
Net Assets							
Unrestricted Net Assets	83,008,392	76,911,052	48,132,624	65,607,373	6,097,340	34,875,768	17,401,019
Total Net Assets	83,008,392	76,911,052	48,132,624	65,607,373	6,097,340	34,875,768	17,401,019
Total Liabilities and Net Assets	94,672,901	87,548,552	80,155,975	76,754,437	7,124,349	14,516,926	17,918,463

Energy Trust of Oregon
Cash Flow Statement-Indirect Method
Monthly 2018

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>Year to Date</u>
Operating Activities:					
<i>Revenue less Expenses</i>	\$ 11,111,618	\$ 11,785,867	\$ 5,880,943	\$ 6,097,341	\$ 34,875,770
<i>Non-cash items:</i>					
Depreciation	60,349	60,436	37,154	35,624	193,563
Change in Reserve on Long Term Note					-
Loss on disposal of assets					-
Receivables	25,330	13,597	(10,052)	(101,297)	(72,421)
Interest Receivable	11,816	701	586	(36,521)	(23,418)
Advances to Vendors	1,053,629	717,885	(1,549,230)	755,704	977,988
Prepaid expenses and other costs	(423,367)	(160,906)	52,859	53,228	(478,186)
Accounts payable	(18,224,160)	(151,198)	(3,016,589)	1,026,311	(20,365,636)
Payroll and related accruals	94,882	102,231	(227,298)	(11,396)	(41,581)
Deferred rent and other	12,093	12,092	12,092	12,093	48,370
Cash rec'd from / (used in) Operating Activities	(6,277,810)	12,380,706	1,180,465	7,831,087	15,114,448
Investing Activities:					
Investment Activity (1)	3,011,583	(2,002,711)	(8,416,303)	(3,992,551)	(11,399,982)
(Acquisition)/Disposal of Capital Assets	(2,843)	(8,444)	(3,397)		(14,684)
Cash rec'd from / (used in) Investing Activities	3,008,740	(2,011,155)	(8,419,700)	(3,992,551)	(11,414,666)
Cash at beginning of Period	52,223,904	48,954,835	59,324,388	52,085,153	52,223,904
Increase/(Decrease) in Cash	(3,269,070)	10,369,552	(7,239,235)	3,838,536	3,699,783
Cash at end of period	\$ 48,954,835	\$ 59,324,388	\$ 52,085,153	\$ 55,923,690	\$ 55,923,690

(1) As investments mature, they are rolled into the Repo account.
Investments that are made during the month reduce available cash.

Energy Trust of Oregon
Cash Flow Projection
January 2018 - December 2019

	Actual				Adjusted Budget							
	January	February	March	April	May	June	July	August	September	October	November	December
Cash In:												
Public purpose and Incr funding												
Investment Income	18,964,634	21,537,912	17,624,324	17,785,777	14,130,693	13,115,705	13,086,622	13,354,632	13,863,360	14,400,594	13,108,268	15,800,399
From Other Sources	48,230	35,414	48,768	21,666	12,903	12,903	12,903	12,903	12,903	12,903	12,903	12,903
Total cash in	19,044,608	21,593,822	17,673,475	17,711,037	14,143,596	13,128,608	13,099,525	13,367,535	13,876,263	14,413,497	13,121,171	15,813,302
Cash Out:												
Net cash flow for the month	(25,325,256)	(9,221,560)	(16,496,406)	(9,879,952)	(13,528,975)	(16,670,303)	(15,489,198)	(13,118,752)	(16,521,279)	(15,784,286)	(17,194,355)	(25,056,001)
Cash Flow from/to Investments	(6,280,648)	12,372,261	1,177,069	7,831,085	614,621	(3,541,695)	(2,389,673)	248,783	(2,645,016)	(1,370,789)	(4,073,184)	(9,242,699)
Cash Flow from/to Investments	3,011,583	(2,002,711)	(8,416,303)	(3,992,551)								
Beginning Balance: Cash & MM	52,223,904	48,954,835	59,324,381	52,085,150	55,923,690	56,538,308	52,996,613	50,606,940	50,855,723	48,210,707	46,839,918	42,766,735
Ending cash & MM	48,954,835	59,324,381	52,085,153	55,923,690	56,538,308	52,996,613	50,606,940	50,855,723	48,210,707	46,839,918	42,766,735	33,524,036
Future Commitments												
Renewable Incentives	8,300,000	8,500,000	6,400,000	4,900,000	5,200,000	5,700,000	6,000,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000
Efficiency Incentives	84,300,000	85,700,000	88,200,000	90,600,000	89,500,000	90,700,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000
Emergency Contingency Pool	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Total Commitments	97,600,000	99,200,000	99,600,000	100,500,000	99,700,000	101,400,000	115,100,000	115,700,000	115,700,000	115,700,000	115,700,000	115,700,000

Dedicated funds adjustment: reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements
 Committed funds adjustment: reduction in available cash for commitments to Efficiency program projects with signed agreements
 Cash reserve: reduction in available cash to cover cashflow variability and winter revenue risk
 Escrow: dedicated funds set aside in separate bank accounts

Energy Trust of Oregon
Cash Flow Projection
January 2018 - December 2019

2019 Final R2 Projection												
	January	February	March	April	May	June	July	September	September	October	November	December
Cash In:												
Public purpose and Incr funding	15,970,862	20,394,304	20,722,660	17,098,459	14,743,958	13,596,738	14,573,633	13,617,897	14,099,097	15,412,038	13,580,079	16,540,633
Investment Income	25,000	15,000	15,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
From Other Sources												
Total cash in	15,995,862	20,409,304	20,737,660	17,113,459	14,763,958	13,616,738	14,593,633	13,637,897	14,119,097	15,432,038	13,600,079	16,560,633
Cash Out:												
Net cash flow for the month	(32,205,780)	(11,040,289)	(12,017,485)	(12,649,468)	(12,460,968)	(13,228,580)	(14,957,185)	(12,174,555)	(13,517,924)	(16,641,042)	(17,904,238)	(21,900,335)
	(16,209,918)	9,369,016	8,720,175	4,463,992	2,302,990	388,158	(363,552)	1,463,343	601,173	(1,209,003)	(4,304,159)	(5,339,702)
Cash Flow from/to Investments	-	-	-	-	-	-	-	-	-	-	-	-
Beginning Balance: Cash & MM	33,524,036	17,314,118	26,683,134	35,403,309	39,867,301	42,170,290	42,558,449	42,194,897	43,658,239	44,259,412	43,050,409	38,746,250
Ending cash & MM	17,314,118	26,683,134	35,403,309	39,867,301	42,170,290	42,558,449	42,194,897	43,658,239	44,259,412	43,050,409	38,746,250	33,406,548
Future Commitments												
Renewable Incentives	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000
Efficiency Incentives	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000
Emergency Contingency Pool	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Total Commitments	115,700,000											

Dedicated funds adjustment: reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements
 Committed funds adjustment: reduction in available cash for commitments to Efficiency program projects with signed agreements
 Cash reserve: reduction in available cash to cover cashflow variability and winter revenue risk
 Escrow: dedicated funds set aside in separate bank accounts

Energy Trust of Oregon
Income Statement - Actual and YTD Budget Comparison
For the Month Ending April 30, 2018
(Unaudited)

	April				YTD			
	Actual	Budget	Budget Variance	Variance %	Actual	Budget	Budget Variance	Variance %
<u>REVENUES</u>								
Public Purpose Funds-PGE	3,471,369	3,264,017	207,353	6%	14,223,023	14,326,571	(103,548)	-1%
Public Purpose Funds-PacifiCorp	2,499,356	2,460,193	39,163	2%	10,539,947	10,365,923	174,024	2%
Public Purpose Funds-NW Natural	2,471,549	2,225,451	246,098	11%	10,677,055	10,529,304	147,751	1%
Public Purpose Funds-Cascade	237,026	178,682	58,344	33%	1,333,032	1,049,081	283,951	27%
Public Purpose Funds-Avista	192,812	96,406	96,406	100%	482,029	385,623	96,406	25%
Total Public Purpose Funds	8,872,112	8,224,748	647,364	8%	37,255,087	36,656,502	598,585	2%
Incremental Funds - PGE	5,986,934	5,954,581	32,353	1%	25,063,671	22,353,265	2,710,406	12%
Incremental Funds - PacifiCorp	2,926,731	2,745,573	181,158	7%	12,671,200	11,796,951	874,249	7%
NW Natural - Industrial DSM				-				-
NW Natural - Washington			-	-	922,689	822,049	100,640	-
Grant Revenue	4,891		4,891	-	28,638		28,638	-
Revenue from Investments	58,187	15,000	43,187	288%	177,496	70,000	107,496	154%
TOTAL REVENUE	17,848,855	16,939,902	908,954	5%	76,118,781	71,698,768	4,420,013	6%
<u>EXPENSES</u>								
Program Subcontracts	4,520,659	4,747,006	226,346	5%	19,567,532	18,920,522	(647,009)	-3%
Incentives	5,182,076	7,039,630	1,857,554	26%	13,738,764	18,815,490	5,076,726	27%
Salaries and Related Expenses	1,265,618	1,266,879	1,260	0%	4,903,075	4,989,500	86,425	2%
Professional Services	552,048	989,381	437,332	44%	2,103,533	3,592,831	1,489,298	41%
Supplies	3,828	3,958	130	3%	13,068	15,833	2,765	17%
Telephone	4,022	4,300	278	6%	15,028	17,200	2,172	13%
Postage and Shipping Expenses	694	2,042	1,348	66%	2,948	8,167	5,219	64%
Occupancy Expenses	80,720	78,703	(2,018)	-3%	319,271	314,811	(4,460)	-1%
Noncapitalized Equip. & Depr.	61,025	84,195	23,170	28%	307,522	370,107	62,585	17%
Call Center	14,159	15,000	842	6%	56,940	60,000	3,060	5%
Printing and Publications	1,625	1,879	254	14%	8,260	5,017	(3,243)	-65%
Travel	16,656	19,404	2,749	14%	51,795	77,617	25,821	33%
Conference, Training & Mtng Exp	13,691	19,808	6,117	31%	58,681	77,733	19,052	25%
Interest Expense and Bank Fees	35		(35)		1648	1,500	(148)	-10%
Insurance	8,803	9,167	364	4%	35,211	36,667	1,456	4%
Miscellaneous Expenses	1,994	250	(1,744)	-698%	2,486	1,000	(1,486)	-149%
Dues, Licenses and Fees	23,862	29,759	5,897	20%	57,253	86,144	28,891	34%
TOTAL EXPENSES	11,751,516	14,311,360	2,559,844	18%	41,243,013	47,390,137	6,147,125	13%
TOTAL REVENUE LESS EXPENSES	6,097,340	2,628,542	3,468,798	132%	34,875,768	24,308,631	10,567,137	43%

Energy Trust of Oregon
Income Statement - Actual and Prior Yr Comparison
For the Month Ending April 30, 2018
(Unaudited)

	April				YTD			
	Actual	Actual Prior Year	Prior Year Variance	Variance %	Actual	Actual Prior Year	Prior Year Variance	Variance %
REVENUES								
Public Purpose Funds-PGE	3,471,369	3,329,754	141,616	4%	14,223,023	14,614,791	(391,767)	-3%
Public Purpose Funds-PacifiCorp	2,499,356	2,402,409	96,947	4%	10,539,947	11,022,064	(482,117)	-4%
Public Purpose Funds-NW Natural	2,471,549	2,278,418	193,132	8%	10,677,055	10,779,905	(102,850)	-1%
Public Purpose Funds-Cascade	237,026	258,025	(20,999)	-8%	1,333,032	1,514,923	(181,891)	-12%
Public Purpose Funds-Avista	192,812	116,365	76,447	66%	482,029	533,798	(51,769)	-10%
Total Public Purpose Funds	8,872,112	8,384,970	487,142	6%	37,255,087	38,465,480	(1,210,394)	-3%
Incremental Funds - PGE	5,986,934	6,016,927	(29,993)	0%	25,063,671	22,587,309	2,476,362	11%
Incremental Funds - PacifiCorp	2,926,731	3,000,123	(73,392)	-2%	12,671,200	13,217,741	(546,541)	-4%
NW Natural - Industrial DSM			0			1,720,596	(1,720,596)	
NW Natural - Washington			0		922,689	544,100	378,589	70%
Grant Revenue	4,891		4,891	-	28,638		28,638	-
Revenue from Investments	58,187	39,013	19,175	49%	177,496	99,958	77,539	78%
TOTAL REVENUE	17,848,855	17,441,033	407,822	2%	76,118,781	76,635,184	(516,403)	-1%
EXPENSES								
Program Subcontracts	4,520,659	4,760,417	239,758	5%	19,567,532	18,228,505	(1,339,027)	-7%
Incentives	5,182,076	7,214,821	2,032,745	28%	13,738,764	19,509,537	5,770,773	30%
Salaries and Related Expenses	1,265,618	1,171,084	(94,534)	-8%	4,903,075	4,494,882	(408,192)	-9%
Professional Services	552,048	588,069	36,021	6%	2,103,533	1,659,069	(444,464)	-27%
Supplies	3,828	1,832	(1,996)	-109%	13,068	10,146	(2,922)	-29%
Telephone	4,022	2,828	(1,194)	-42%	15,028	19,952	4,924	25%
Postage and Shipping Expenses	694	1,016	323	32%	2,948	4,135	1,187	29%
Occupancy Expenses	80,720	73,202	(7,518)	-10%	319,271	301,800	(17,471)	-6%
Noncapitalized Equip. & Depr.	61,025	92,106	31,081	34%	307,522	378,579	71,057	19%
Call Center	14,159	11,712	(2,447)	-21%	56,940	48,407	(8,533)	-18%
Printing and Publications	1,625	495	(1,130)	-228%	8,260	1,940	(6,320)	-326%
Travel	16,656	29,249	12,594	43%	51,795	59,558	7,762	13%
Conference, Training & Mtng Exp	13,691	27,907	14,215	51%	58,681	66,084	7,403	11%
Interest Expense and Bank Fees	35	-	(35)		1,648	1,678	30	2%
Insurance	8,803	8,607	(196)	-2%	35,211	34,429	(782)	-2%
Miscellaneous Expenses	1,994	6,488	4,494	69%	2,486	11,097	8,610	78%
Dues, Licenses and Fees	23,862	22,252	(1,610)	-7%	57,253	71,936	14,683	20%
TOTAL EXPENSES	11,751,516	14,012,086	2,260,570	16%	41,243,013	44,901,732	3,658,720	8%
TOTAL REVENUE LESS EXPENSES	6,097,340	3,428,947	2,668,394	78%	34,875,768	31,733,451	3,142,317	-10%

Energy Trust of Oregon
Statement of Functional Expenses
For the 4 Months Ending April 30, 2018
(Unaudited)

	Energy Efficiency	Renewable Energy	Solar LMI	Total Program Expenses	Management & General	Communications & Customer Service	Total Admin Expenses	Community Solar Expenses	Total	Budget	Variance	% Var
Program Expenses												
Incentives	12,021,607	1,717,157		13,738,764					13,738,764	18,815,490	5,076,726	27%
Program Management & Delivery	19,396,323	171,209		19,567,532					19,567,532	18,920,522	(647,010)	-3%
Payroll and Related Expenses	1,415,677	439,248	14,832	1,869,758	819,731	665,621	1,485,352	1,164	3,356,274	3,367,587	11,313	0%
Outsourced Services	1,048,757	255,821	10,000	1,314,579	167,035	458,226	625,261		1,939,839	3,314,886	1,375,047	41%
Planning and Evaluation	889,081	46,979		936,060	3,523	58,724	62,247		998,307	1,049,051	50,744	5%
Customer Service Management	87,810	41,490		129,300					129,300	137,407	8,107	6%
Trade Allies Network	113,707	13,243		126,950					126,950	129,507	2,557	2%
Total Program Expenses	34,972,961	2,685,148	24,832	37,682,942	990,289	1,182,571	2,172,860	1,164	39,856,966	45,734,450	5,877,484	13%
Program Support Costs												
Supplies	3,297	1,081	7	4,385	3,757	1,535	5,292		9,678	11,463	1,785	16%
Postage and Shipping Expenses	679	246	2	927	368	344	712		1,639	6,469	4,830	75%
Telephone	685	248	2	935	371	341	712		1,647	2,909	1,262	43%
Printing and Publications	653	130	1	784	6,637	182	6,819		7,603	4,052	(3,551)	-88%
Occupancy Expenses	90,261	32,693	211	123,165	48,875	44,844	93,719		216,884	218,439	1,555	1%
Insurance	9,954	3,605	23	13,583	5,390	4,946	10,336		23,919	25,442	1,523	6%
Equipment	928	46,728	2	47,657	502	461	963		48,620	49,952	1,332	3%
Travel	12,970	4,506	1,202	18,678	8,394	14,916	23,310		41,988	62,883	20,895	33%
Meetings, Trainings & Conferences	12,323	3,746	0	16,070	12,029	3,602	15,630		31,700	48,300	16,600	34%
Interest Expense and Bank Fees					1,648		1,648		1,648	1,500	(148)	-10%
Depreciation & Amortization	11,743	4,253	28	16,023	6,358	5,834	12,193		28,216	38,823	10,607	27%
Dues, Licenses and Fees	24,915	4,845		29,760	4,389	12,935	17,324		47,085	60,564	13,479	22%
Miscellaneous Expenses	1,492	142	1	1,635	212	195	407		2,042	694	(1,348)	-194%
IT Services	580,226	83,429	528	664,183	142,271	116,925	259,196		923,379	1,124,196	200,817	18%
Total Program Support Costs	750,126	185,652	2,007	937,785	241,201	207,060	448,261	-	1,386,047	1,655,686	269,639	16%
TOTAL EXPENSES	35,723,094	2,870,801	26,839	38,620,727	1,231,490	1,389,630	2,621,120	1,164	41,243,013	47,390,137	6,147,125	13%

OPUC Measure vs. 8%	4.7%
Program Support Costs	937,785
Total Admin Exp and Community Solar	2,622,284
Total Support and Administrative	3,560,069
	<i>divided by</i>
Total Utility Revenue (without Int Income)	75,912,646
OPUC %	4.7%

ENERGY TRUST OF OREGON
Summary of All Units
For the 4 Months Ending April 30, 2018

	ENERGY EFFICIENCY									
	PGE	PacifiCorp	Total	NWN Industrial	NW Natural	Cascade	Avista	Oregon Total	NWN WA	ETO Total
REVENUES										
Public Purpose Funding	11,026,282	8,177,102	19,203,383		10,677,055	1,333,032	482,029	31,695,500		31,695,500
Incremental Funding	25,063,671	12,671,200	37,734,871					37,734,871	922,689	38,657,560
Grant Revenue										
Contributions										
Revenue from Investments										
TOTAL PROGRAM REVENUE	36,089,953	20,848,302	56,938,254	-	10,677,055	1,333,032	482,029	69,430,371	922,689	70,353,060
EXPENSES										
Program Management (Note 3)	1,182,452	688,119	1,870,571	55,434	335,368	25,759	37,605	2,324,737	57,467	2,382,204
Program Delivery	8,970,701	5,331,485	14,302,187	211,190	2,396,627	190,282	286,247	17,386,531	121,305	17,507,836
Incentives	6,238,451	3,323,401	9,561,853	132,220	1,783,168	128,522	212,541	11,818,305	203,302	12,021,607
Program Eval & Planning Svcs.	646,285	369,292	1,015,578	9,663	171,453	11,724	23,015	1,231,433	51,677	1,283,110
Program Marketing/Outreach	654,945	397,142	1,052,087	6,179	247,246	13,122	32,819	1,351,452	13,574	1,365,026
Program Legal Services	-	-	-	-	-	-	-	-	-	-
Program Quality Assurance	3,697.00	3,100.00	6,796.00	-	2,506.00	152.00	234.00	9,689.00	-	9,689.00
Outsourced Services	102,922	62,109	165,030	3,649	26,336	1,952	3,021	199,989	1,988	201,977
Trade Allies & Cust. Svc. Mgmt.	83,609	62,516	146,125	324	47,366	2,884	4,816	201,518	0	201,518
IT Services	286,566	165,632	452,198	5,331	93,103	6,304	11,080	568,014	12,212	580,226
Other Program Expenses - all	77,739	45,616	123,354	2,346	21,197	1,541	2,631	151,071	18,830	169,901
TOTAL PROGRAM EXPENSES	18,247,367	10,448,412	28,695,779	426,336	5,124,370	382,242	614,009	35,242,739	480,355	35,723,094
ADMINISTRATIVE COSTS										
Management & General (Notes 1 & 2)	582,275	333,410	915,685	13,605	163,519	12,197	19,594	1,124,598	15,328	1,139,926
Communications & Customer Svc (Notes 1 & 2)	657,046	376,223	1,033,270	15,351	184,518	13,763	22,109	1,269,012	17,296	1,286,308
Total Administrative Costs	1,239,321	709,633	1,948,955	28,956	348,037	25,960	41,703	2,393,610	32,624	2,426,234
TOTAL PROG & ADMIN EXPENSES	19,486,688	11,158,045	30,644,734	455,292	5,472,407	408,202	655,712	37,636,349	512,979	38,149,328
TOTAL REVENUE LESS EXPENSES	16,603,265	9,690,257	26,293,520	(455,292)	5,204,648	924,830	(173,683)	31,794,022	409,710	32,203,732
NET ASSETS - RESERVES										
Cumulative Carryover at 12/31/17	12,210,566	6,211,801	18,422,366	2,647,089	3,527,716	262,067	75,717	24,934,948	176,506	25,111,445
Net Assets Reattributed from prior year										
Change in net assets this year	16,603,265	9,690,257	26,293,520	(455,292)	5,204,648	924,830	(173,683)	31,794,022	409,710	32,203,732
Ending Net Assets - Reserves	28,813,831	15,902,058	44,715,886	2,191,797	8,732,364	1,186,897	(97,966)	56,728,970	586,216	57,315,177
Ending Reserve by Category										
Program Reserves (Efficiency and Renewables)	28,813,831	15,902,058	44,715,886	2,191,797	8,732,364	1,186,897	(97,966)	56,728,970	586,216	57,315,177
Operational Contingency Pool										
Emergency Contingency Pool										
TOTAL NET ASSETS CUMULATIVE	28,813,831	15,902,058	44,715,886	2,191,797	8,732,364	1,186,897	(97,966)	56,728,970	586,216	57,315,177

Note 1) Management & General and Communications & Customer Service Expenses (Admin) have been allocated based on total expenses.

Note 2) Admin costs are allocated for mgmt reporting only. GAAP for Not for Profits does not allow allocation of admin costs to program expenses.

Note 3) Program Management costs include both outsourced and internal staff.

ENERGY TRUST OF OREGON
Summary of All Units
For the 4 Months Ending April 30, 2018

	RENEWABLE ENERGY			Solar LMI	Community Solar	Other	TOTAL	Approved budget	Change	% Change
	PGE	PacifiCorp	Total				All Programs			
REVENUES										
Public Purpose Funding	3,196,742	2,362,845	5,559,587				37,255,087	36,656,502	598,585	2%
Incremental Funding							38,657,560	34,972,266	3,685,294	11%
Grant Revenue				28,638			28,638		28,638	
Contributions									-	
Revenue from Investments						177,496	177,496	70,000	107,496	154%
TOTAL PROGRAM REVENUE	3,196,742	2,362,845	5,559,587	28,638	-	177,496	76,118,781	71,698,768	4,420,013	6%
EXPENSES										
Program Management (Note 3)	277,847	164,734	442,582	14,832	1,164	-	2,840,782	3,001,848	161,066	5%
Program Delivery	106,744	61,131	167,875	-	-	-	17,675,711	16,725,610	(950,101)	-6%
Incentives	1,022,894	694,263	1,717,157	-	-	-	13,738,764	18,815,489	5,076,725	27%
Program Eval & Planning Svcs.	28,834	18,145	46,979	-	-	-	1,330,089	2,094,663	764,574	37%
Program Marketing/Outreach	48,493	35,173	83,665	-	-	-	1,448,691	1,660,702	212,011	13%
Program Legal Services	-	-	-	-	-	-	-	2,000	2,000	100%
Program Quality Assurance	-	-	-	-	-	-	9,689	28,333	28,333	100%
Outsourced Services	122,441	49,715	172,156	10,000	-	-	384,133	709,030	324,897	46%
Trade Allies & Cust. Svc. Mgmt.	31,772	22,962	54,734	-	-	-	256,252	263,582	7,330	3%
IT Services	52,873	30,557	83,429	528	-	-	664,183	808,629	144,446	18%
Other Program Expenses - all	60,950	41,274	102,224	1,479	-	-	273,604	314,693	41,089	13%
TOTAL PROGRAM EXPENSES	1,752,848	1,117,954	2,870,801	26,839	1,164	-	38,621,898	44,424,579	5,802,681	13%
ADMINISTRATIVE COSTS										
Management & General (Notes 1 & 2)	55,281	35,202	90,483	1,081	-	-	1,231,490	1,575,105	343,614	22%
Communications & Customer Svc (Notes 1 & 2)	62,671	39,933	102,603	719	-	-	1,389,630	1,390,454	824	0%
Total Administrative Costs	117,952	75,135	193,086	1,800	-	-	2,621,120	2,965,559	344,439	12%
TOTAL PROG & ADMIN EXPENSES	1,870,800	1,193,089	3,063,887	28,639	1,164	-	41,243,013	47,390,137	6,147,125	13%
TOTAL REVENUE LESS EXPENSES	1,325,942	1,169,756	2,495,700	-	(1,164)	177,496	34,875,768	24,308,631	10,567,137	43%
NET ASSETS - RESERVES										
Cumulative Carryover at 12/31/17	7,073,073	6,268,079	13,341,154	-	38,710	9,641,309	48,132,624	43,871,177	4,261,447	10%
Net Assets Reattributed from prior year							-			
Change in net assets this year	1,325,942	1,169,756	2,495,700	-	(1,164)	177,496	34,875,768	24,308,631	10,567,137	43%
Ending Net Assets - Reserves	8,399,015	7,437,835	15,836,854	-	37,546	9,818,805	83,008,392	68,179,808	14,828,584	22%
Ending Reserve by Category										
Program Reserves (Efficiency and Renewables)	8,399,015	7,437,835	15,836,854	-	37,546		73,189,577			
Operational Contingency Pool						4,818,805	4,818,805			
Emergency Contingency Pool						5,000,000	5,000,000			
TOTAL NET ASSETS CUMULATIVE	8,399,015	7,437,835	15,836,854	-	37,546	9,818,805	83,008,392	68,179,808	14,828,584	22%

Energy Trust of Oregon
Program Expense by Service Territory
For the 4 Months Ending April 30, 2018
(Unaudited)

	<u>PGE</u>	<u>Pacific Power</u>	<u>Subtotal Elec.</u>	<u>NWN Industrial</u>	<u>NW Natural Gas</u>	<u>Cascade</u>	<u>Avista</u>	<u>Subtotal Gas</u>	<u>Oregon Total</u>	<u>NWN WA</u>	<u>Solar LMI</u>	<u>Community Solar</u>	<u>ETO Total</u>	<u>YTD Budget</u>	<u>Variance</u>	<u>% Var</u>
Energy Efficiency																
Commercial																
Existing Buildings	\$4,939,033	\$2,412,175	\$7,351,207	\$121,696	\$976,101	\$64,953	\$270,499	\$1,433,249	\$8,784,456	\$159,272			\$8,943,728	\$12,017,956	\$3,074,228	26%
Multifamily Buildings	1,991,988	579,696	2,571,684	2,738	222,889	7,269	31,547	264,444	2,836,128				2,836,128	2,733,046	(103,082)	-4%
New Buildings	2,436,349	992,086	3,428,435	3,230	665,293	57,329	66,225	792,077	4,220,512				4,220,512	4,514,520	294,008	7%
NEEA	494,865	373,319	868,184		86,185	9,258		95,443	963,627				963,627	770,559	(193,068)	-25%
Total Commercial	9,862,235	4,357,276	14,219,511	127,664	1,950,468	138,809	368,271	2,585,212	16,804,723	159,272	-	-	16,963,995	20,036,081	3,072,086	15%
Industrial																
Production Efficiency	4,456,279	2,532,304	6,988,583	327,624	122,891	42,203	11,280	503,998	7,492,581				7,492,581	7,798,453	305,872	4%
NEEA	27,351	20,635	47,986						47,986				47,986	270,755	222,769	82%
Total Industrial	4,483,630	2,552,939	7,036,569	327,624	122,891	42,203	11,280	503,998	7,540,567	-	-	-	7,540,567	8,069,208	528,641	7%
Residential																
Residential Combined	4,396,313	3,686,185	8,082,498		2,957,455	179,754	276,160	3,413,369	11,495,867	353,703	-	-	11,849,570	13,772,744	1,923,174	14%
NEEA	744,510	561,646	1,306,156		441,595	47,436		489,031	1,795,187				1,795,187	1,579,794	(215,393)	-14%
Total Residential	5,140,823	4,247,831	9,388,655		3,399,049	227,190	276,160	3,902,399	13,291,054	353,703	-	-	13,644,757	15,352,538	1,707,781	11%
Energy Efficiency Program Costs	19,486,688	11,158,046	30,644,734	455,288	5,472,408	408,202	655,712	6,991,610	37,636,349	512,979	-	-	38,149,328	43,457,827	5,308,499	12%
Renewables																
Solar Electric (Photovoltaic)	1,335,837	965,741	2,301,578						2,301,578		28,639		2,330,217	2,896,035	565,818	20%
Other Renewable	534,962	227,350	762,312						762,312				762,312	1,036,275	273,963	26%
Renewables Program Costs	1,870,799	1,193,091	3,063,887						3,063,887		28,639	-	3,092,526	3,932,310	839,784	21%
Community Solar Development												1,164	1,164		(1,164)	
Cost Grand Total	21,357,487	12,351,137	33,708,621	455,288	5,472,408	408,202	655,712	6,991,610	40,700,236	512,979	28,639	1,164	41,243,013	47,390,137	6,147,125	13%

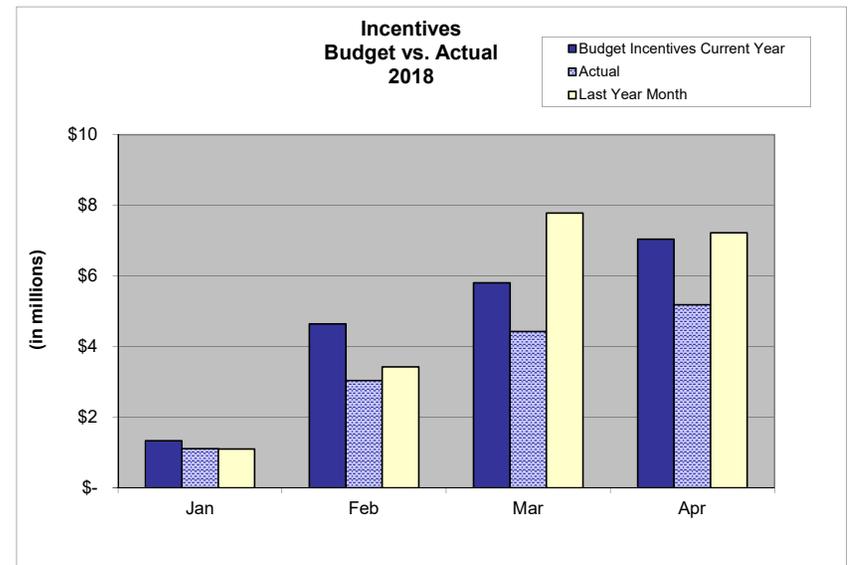
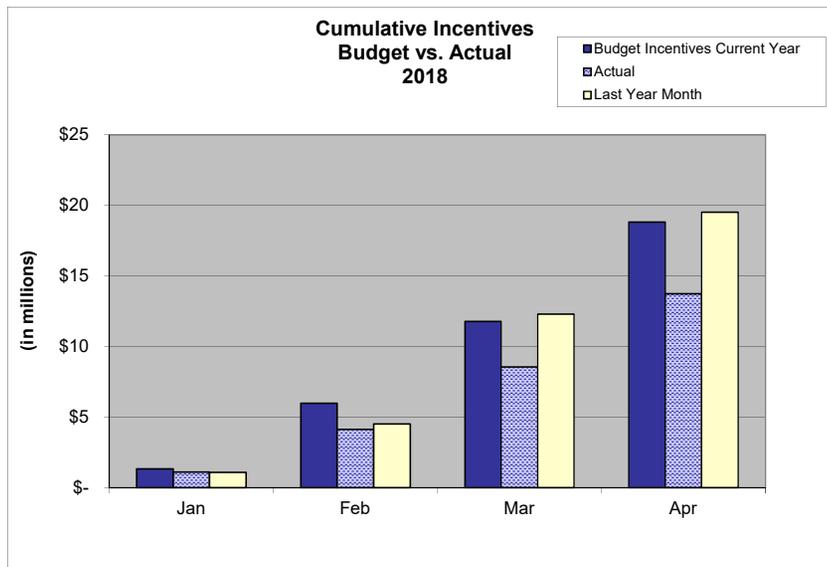
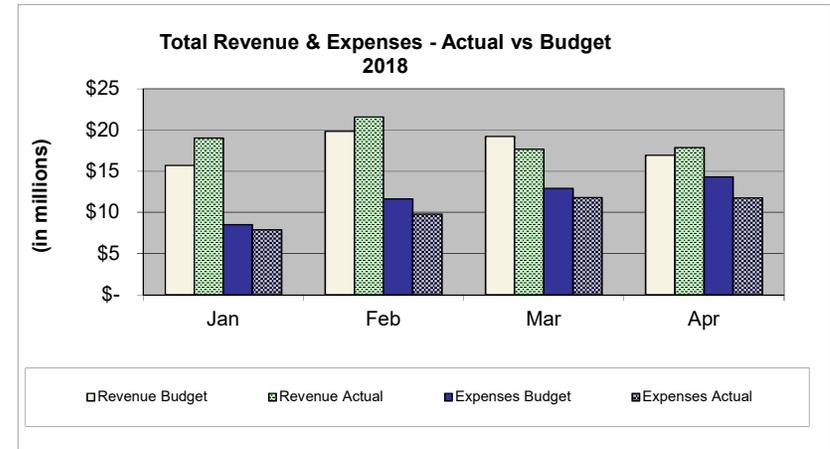
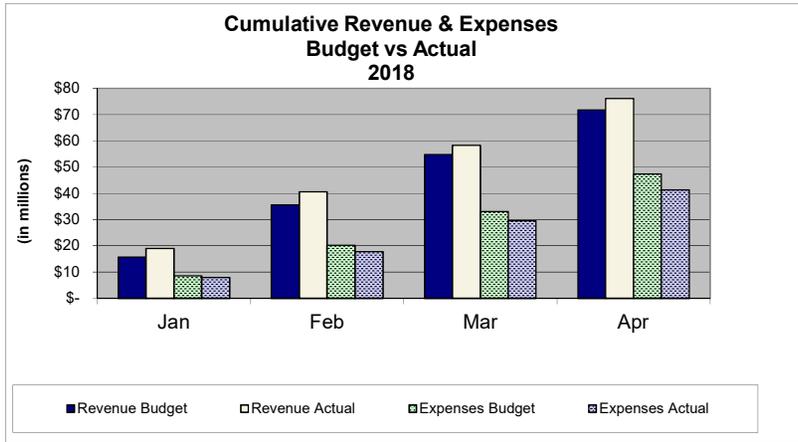
Energy Trust of Oregon
Administrative Expenses
For the 4 Months Ending April 30, 2018
(Unaudited)

EXPENSES	MANAGEMENT & GENERAL						COMMUNICATIONS & CUSTOMER SERVICE					
	ACTUAL	QUARTERLY		YTD			ACTUAL	QUARTERLY		YTD		
		BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE		BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE
Outsourced Services	\$37,671	\$351,579	\$313,908	\$159,072	\$386,356	\$227,283	\$84,650	\$341,500	\$256,850	\$458,226	\$455,333	(\$2,893)
Legal Services	1,026	6,250	5,224	7,963	8,333	371						
Salaries and Related Expenses	206,460	697,253	490,793	819,731	873,323	53,591	169,889	480,828	310,939	665,621	641,104	(24,517)
Supplies	218	725	507	2,141	967	(1,174)		250	250	52	333	281
Postage and Shipping Expenses		750	750		1,000	1,000				7		(7)
Printing and Publications	512	1,125	613	6,443	1,500	(4,943)		2,500	2,500	4	833	829
Travel	1,085	13,850	12,765	8,394	18,467	10,073	3,934	12,500	8,566	14,916	16,667	1,751
Conference, Training & Mtngs	1,564	13,250	11,686	12,013	17,667	5,653	835	5,500	4,665	3,587	7,333	3,746
Interest Expense and Bank Fees	35		(35)	1,648	1,500	(148)						
Dues, Licenses and Fees	1,339	14,062	12,723	4,389	17,550	13,161	1,210	4,500	3,290	12,935	6,000	(6,935)
Shared Allocation (Note 1)	16,100	54,211	38,111	63,903	71,529	7,626	15,575	44,553	28,978	58,633	58,786	153
IT Service Allocation (Note 2)	34,536	139,229	104,692	142,271	173,212	30,941	28,384	114,425	86,041	116,925	142,354	25,429
Planning & Eval	848	2,911	2,063	3,523	3,703	179	14,137	48,515	34,378	58,724	61,709	2,985
TOTAL EXPENSES	301,394	1,295,194	993,800	1,231,490	1,575,107	343,615	318,614	1,055,070	736,456	1,389,630	1,390,452	823

Note 1) Represents allocation of Shared (General Office Management) Costs

Note 2) Represents allocation of Shared IT Costs

Administrative Expenses 1st Month of Quarter



For contracts with costs
through: 5/1/2018

CONTRACTOR	Description	City	EST COST	Actual TTD	Remaining	Start	End
Administration							
Administration Total:			13,259,798	5,154,139	8,105,658		
Communications							
Communications Total:			5,872,188	2,551,158	3,321,030		
Energy Efficiency							
Northwest Energy Efficiency Alliance	Regional EE Initiative Agmt	Portland	36,142,871	22,967,375	13,175,496	1/1/2015	7/1/2020
ICF Resources, LLC	2018 BE PMC	Fairfax	15,616,683	4,853,912	10,762,771	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Residential PMC	Austin	8,483,204	2,687,858	5,795,346	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 NBE PMC	Austin	6,206,575	2,193,821	4,012,754	1/1/2018	12/31/2018
Northwest Energy Efficiency Alliance	Regional Gas EE Initiative	Portland	5,864,530	2,802,445	3,062,085	1/1/2015	7/1/2020
Lockheed Martin Corporation	2018 MF PMC	Grand Prairie	4,655,000	1,384,068	3,270,932	1/1/2018	12/31/2018
Energy 350 Inc	PDC - PE 2018	Portland	3,199,704	992,023	2,207,681	1/1/2018	12/31/2018
Intel Corporation	EE Project Incentive Agmt	Hillsboro	2,400,000	0	2,400,000	11/13/2015	12/31/2019
TRC Engineers Inc.	2018 EPS New Const PDC	Irvine	1,946,406	578,565	1,367,841	1/1/2018	12/31/2018
Evergreen Consulting Group, LLC	PE Lighting PDC 2018	Tigard	1,875,000	654,322	1,220,678	1/1/2018	12/31/2018
Northwest Power & Conservation Council	RTF Funding Agreement		1,825,000	1,349,096	475,904	2/25/2015	12/31/2019
Cascade Energy, Inc.	PE Lighting PDC 2018	Walla Walla	1,823,250	602,584	1,220,666	1/1/2018	12/31/2018
RHT Energy Inc.	PDC - PE 2018	Medford	1,665,704	519,628	1,146,076	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Retail PDC	Austin	1,645,112	544,419	1,100,693	1/1/2018	12/31/2018
KEMA Incorporated	EB & SEM 15-16 Evaluation	Oakland	575,000	574,999	1	6/8/2017	5/31/2018
Craft3	Loan Agreement	Portland	500,000	167,000	333,000	1/1/2018	12/31/2019
Pivotal Energy Solutions LLC	License Agreement	Gilbert	490,500	228,050	262,450	3/1/2014	12/31/2019
Michaels Energy, Inc.	NBE '15 & '16 Impact Eval	La Crosse	425,000	31,667	393,333	3/5/2018	3/1/2019
KEMA Incorporated	EB & SEM 2017 Evaluation	Oakland	350,000	0	350,000	4/10/2018	5/30/2019
Balanced Energy Solutions LLC	New Homes QA Inspections	Portland	321,700	144,828	176,872	4/27/2015	12/31/2018
Craft3	Loan Agreement	Portland	300,000	300,000	0	6/1/2014	6/20/2025
EnergySavvy Inc.	Optix Engage Online Audit Tool	Seattle	273,600	224,000	49,600	6/1/2016	5/31/2018
ICF Resources, LLC	2018 BE PMC - WA	Fairfax	258,286	69,166	189,120	1/1/2018	12/31/2018
Alternative Energy Systems Consulting, Inc.	PE Mobile App Scoping Tool	Carlsbad	249,830	249,675	155	6/1/2016	6/27/2018
CLEAResult Consulting Inc	2018 Residential PMC - WA	Austin	238,129	67,033	171,096	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Residential PMC - CustSvc	Austin	174,000	56,940	117,060	1/1/2018	12/31/2018
ICF Resources, LLC	2018 BE PMC - DSM	Fairfax	161,119	44,522	116,597	1/1/2018	12/31/2018
Open Energy Efficiency, Inc.	Automated Meter Data Analysis	Mill Valley	150,000	49,330	100,670	1/1/2018	12/31/2018
The Cadmus Group LLC	Residential DHP Study	Portland	140,000	0	140,000	4/18/2018	12/31/2018

For contracts with costs
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Research Into Action, Inc.	PE Process Evaluation	Portland	138,000	0	138,000	4/2/2018	6/14/2019
Hitachi Consulting Corporation	SOW #20 NB RFP Coordination	Dallas	127,500	75,563	51,938	1/2/2018	7/9/2018
Research Into Action, Inc.	Fast Feedback 2018	Portland	112,000	44,859	67,141	2/15/2018	5/31/2019
Alternative Energy Systems Consulting, Inc.	PE Review of Technical Studies	Carlsbad	100,000	39,690	60,310	5/22/2017	12/31/2018
Research Into Action, Inc.	NB Market Research 2018	Portland	90,000	30,163	59,838	1/1/2018	7/1/2018
WegoWise Inc	benchmarking license	Boston	90,000	38,746	51,254	6/15/2014	12/31/2019
1000 Broadway Building L.P.	Pay-for-Performance Pilot	Portland	88,125	80,959	7,166	10/17/2014	11/1/2018
The Cadmus Group Inc.	Residential Air Conditioning	Watertown	83,550	74,981	8,569	7/1/2017	6/30/2018
CLEAResult Consulting Inc	Professional Services/Trans	Austin	81,688	69,170	12,518	10/15/2014	10/15/2018
Evergreen Economics	Research Cannabis Market	Portland	80,130	80,131	(1)	6/23/2017	4/30/2018
Energy 350 Inc	Professional Services	Portland	64,062	63,993	70	12/10/2014	12/10/2018
TRC Engineers Inc.	2018 EPS New Const PDC - WA	Irvine	63,456	11,217	52,239	1/1/2018	12/31/2018
Craft3	SWR Loan Origination/Loss Fund	Portland	55,000	0	55,000	1/1/2018	12/31/2019
Research Into Action, Inc.	Evaluation MHR Pilot	Portland	52,000	16,957	35,043	5/1/2017	2/28/2019
Navigant Consulting Inc	Evaluation Cosultant-DSM Proj.	Boulder	50,500	36,954	13,546	6/15/2017	6/1/2019
Ecotope, Inc.	NB - NEEA Impact Evaluation	Seattle	50,000	31,190	18,810	10/23/2017	12/31/2018
Apex Analytics	Residential Windows Research	Boulder	45,000	0	45,000	5/15/2018	12/31/2018
EES Consulting, Inc	Professional Services Agmt	Kirkland	44,680	30,240	14,440	10/1/2016	9/30/2018
Evergreen Economics	New Home Pilot- DHP	Portland	44,000	4,574	39,426	11/1/2017	3/31/2019
Brightworks Sustainability LLC	Net Zero Fellowship Grant Agmt	Portland	43,500	24,000	19,500	4/5/2017	8/31/2018
BASE zero LLC	Quality Assurance Services	Bend	43,075	29,536	13,539	3/1/2016	12/31/2018
Research Into Action, Inc.	Lighting Tool-Mrkt Research	Portland	42,237	39,204	3,033	12/1/2017	6/30/2018
The Cadmus Group Inc.	Existing Homes DHP Study	Watertown	40,000	40,000	0	9/25/2017	3/31/2019
The Cadmus Group Inc.	SEM Impact Pt 2	Watertown	39,110	0	39,110	3/16/2018	7/1/2018
The Cadmus Group Inc.	Assess - Subset Load Profiles	Watertown	38,580	6,558	32,022	2/5/2018	8/1/2018
MetaResource Group	Intel Mod 1&2 Megaproject	Portland	35,000	1,297	33,703	3/1/2018	10/12/2018
The Cadmus Group Inc.	Air Conditioning Measures	Watertown	32,950	22,660	10,290	8/22/2016	8/22/2018
Research Into Action, Inc.	Evaluation - APS Pilot	Portland	31,219	13,240	17,980	7/1/2017	12/31/2018
Northwest Energy Efficiency Council	Toll Lending Lbry Sponsorship	Seattle	30,500	30,500	0	1/1/2018	12/31/2018
American Council for and Energy Efficient Economy	Research Sponsorship - 2018		30,000	30,000	0	1/1/2018	12/31/2018
MetaResource Group	Pay-for-Performance Evaluation	Portland	25,000	3,720	21,280	2/1/2018	8/15/2018
Sustainable Northwest	Klamath Ag Program	Portland	24,990	9,372	15,618	2/1/2018	12/10/2018
FMYI, INC	Subscription Agreement	Portland	24,650	15,350	9,300	4/25/2016	1/15/2019
Cadeo Group LLC	Evaluation Consulting Services	Washington	24,620	0	24,620	5/1/2018	12/31/2018
Consortium for Energy Efficiency	Membership Dues - 2018		23,074	23,074	0	1/1/2018	12/31/2018

For contracts with costs
through: 5/1/2018

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Evergreen Consulting Group, LLC	Lighting Conslt.-Mrkt Research	Tigard	22,000	22,000	0	12/13/2017	5/31/2018
Earth Advantage, Inc.	Sponsorship	Portland	17,750	10,250	7,500	3/1/2017	2/28/2019
Sheepscot Creative LLC	SEM Videos	Portland	15,400	10,780	4,620	2/19/2018	7/31/2018
Research Into Action, Inc.	Research -MF Energy Savings	Portland	15,360	0	15,360	1/5/2018	6/30/2018
KEMA Incorporated	New Bldg Evaluation	Oakland	13,000	1,847	11,153	10/1/2017	3/31/2019
American Council for and Energy Efficient Economy	ACEEE Sponsorship - 2018		12,500	12,500	0	1/1/2018	12/31/2018
Consortium for Energy Efficiency	IEM DSM Sponsorship		10,000	0	10,000	3/13/2018	12/31/2018
Hacker Architects Inc	Special Proj. Grant Agreement	Portland	10,000	9,000	1,000	11/7/2017	5/30/2018
Alliance For Sustainable Energy, LLC	Technical Services Agreement	Lakewood	9,609	9,609	0	3/19/2018	11/30/2018
LightTracker, Inc.	Lighting Market Analysis	Boulder	9,000	0	9,000	4/1/2018	12/31/2018
The Leede Research Group Inc	Evaluation Consultant	Manitowoc	9,000	8,995	5	5/1/2017	6/30/2018
City of Portland Bureau of Planning & Sustainability	Sponsorship - 2018	Portland	8,000	8,000	0	1/1/2018	12/31/2018
Resource Innovation Institute	2018 Event Sponsorship	Portland	7,500	7,500	0	2/7/2018	12/31/2018
Northwest Energy Efficiency Council	BOC 2018 Sponsorship	Seattle	7,300	7,300	0	1/1/2018	12/31/2018
Northwest Food Processors Association	NW Industrial EE Summit 2018	Portland	6,846	0	6,846	4/1/2018	4/30/2018
The Cadmus Group Inc.	NB Evaluation Plan	Watertown	6,500	0	6,500	10/1/2017	3/31/2019
Sheepscot Creative LLC	Business Case for EE Video	Portland	6,400	0	6,400	3/30/2018	5/30/2018
Shades of Green	Shades of Green Sponsorship	Portland	5,000	5,000	0	11/6/2017	10/30/2018
Energy Efficiency Total:			100,135,564	45,468,002	54,667,561		

Joint Programs

E Source Companies LLC	Membership Agreement	Boulder	75,607	75,607	0	1/1/2018	12/31/2018
Structured Communications Systems, Inc.	ShoreTel Phone System Install		70,345	65,287	5,059	1/1/2017	12/31/2018
CoStar Realty Information Inc	Property Data	Baltimore	48,020	45,800	2,220	6/1/2011	5/31/2018
Infogroup Inc	Data License & Service Agmt	Papillion	26,114	13,057	13,057	2/12/2018	2/12/2020
Research Into Action, Inc.	Trade Ally Survey	Portland	20,000	0	20,000	4/24/2018	11/30/2018
Navigant Consulting Inc	Resource Assessment Updates	Boulder	10,600	9,825	775	8/26/2016	8/26/2018
Joint Programs Total:			250,686	209,576	41,110		

Renewable Energy

Sunway 3, LLC	Prologis PV installation		3,405,000	3,261,044	143,956	9/30/2008	9/30/2028
Clean Water Services	Project Funding Agreement		3,000,000	2,013,106	986,894	11/25/2014	11/25/2039
Oregon Institute of Technology	Geothermal Resource Funding	Klamath Falls	1,550,000	1,550,000	0	9/11/2012	9/11/2032
Farm Power Misty Meadows LLC	Misty Meadows Biogas Facility	Mount Vernon	1,000,000	1,000,000	0	10/25/2012	10/25/2027
Three Sisters Irrigation District	TSID Hydro	Sisters	1,000,000	1,000,000	0	4/25/2012	9/30/2032
Farmers Irrigation District	FID - Plant 2 Hydro	Hood River	900,000	900,000	0	4/1/2014	4/1/2034

For contracts with costs
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Klamath Falls Solar 2 LLC	PV Project Funding Agreement	San Mateo	850,000	382,500	467,500	7/11/2016	7/10/2041
Old Mill Solar, LLC	Project Funding Agmt Bly, OR	Lake Oswego	490,000	490,000	0	5/29/2015	5/28/2030
City of Medford	750kW Combined Heat & Power	Medford	450,000	450,000	0	10/20/2011	10/20/2031
City of Pendleton	Pendleton Microturbines	Pendleton	450,000	150,000	300,000	4/20/2012	4/20/2032
Deschutes Valley Water District	Opal Springs Hydro Project	Madras	450,000	0	450,000	1/1/2018	4/1/2040
RES - Ag FGO LLC	Biogas Manure Digester Project	Washington	441,660	441,660	0	10/27/2010	10/27/2025
RES - Ag FGO LLC	Biogas Manure Digester - FGO	Washington	441,660	438,660	3,000	10/27/2010	10/27/2025
Three Sisters Irrigation District	TSID Funding Agreement	Sisters	400,000	0	400,000	1/1/2018	12/31/2038
Farmers Conservation Alliance	Program Support	Hood River	367,000	61,415	305,585	1/1/2018	12/31/2019
SunE Solar XVI Lessor, LLC	BVT Sexton Mtn PV	Bethesda	355,412	355,412	0	5/15/2014	12/31/2034
City of Gresham	City of Gresham Cogen 2		350,000	334,523	15,477	4/9/2014	7/9/2034
BSA Enterprises Inc	Solar Verifier Services	Sisters	200,000	116,599	83,401	8/1/2016	7/31/2018
Gary Higbee DBA WindStream Solar	Solar Verifier Services	Eugene	200,000	143,498	56,502	8/1/2016	7/31/2018
Luxurious Plumbing and Heating, Inc.	Solar Verifier Services	West Linn	200,000	192,280	7,720	8/1/2016	7/31/2018
RHT Energy Inc.	Verifier Services Agmt - Solar	Medford	200,000	183,918	16,083	8/1/2016	7/31/2018
City of Astoria	Bear Creek Funding Agreement	Astoria	143,000	143,000	0	3/24/2014	3/24/2034
Solar Oregon	Outreach Agreement	Portland	135,300	115,400	19,900	1/1/2015	6/30/2018
Clean Power Research, LLC	PowerClerk License	Napa	109,175	109,175	0	7/1/2017	6/30/2018
SPS of Oregon Inc	Project Funding Agreement	Wallowa	75,000	74,513	488	10/15/2015	10/31/2036
Kendrick Business Services LLC	Small Business Support Agmt	Albany	60,000	8,575	51,425	11/1/2016	6/30/2018
Kleinschmidt Associates	Evaluation Services	Pittsfield	47,400	47,609	(209)	1/1/2017	11/30/2018
OSEIA-Oregon Solar Energy Industries Assoc	Technical Training Course Dev		41,650	37,500	4,150	1/1/2017	5/30/2018
TRC Engineers Inc.	2018 EPS New Const PDC - Solar	Irvine	41,500	10,140	31,360	1/1/2018	12/31/2018
Clean Energy States Alliance	CESA Membership 17-18		39,500	39,500	0	7/1/2017	6/30/2018
Craft3	NON-EEAST OBR Svc Agmt	Portland	30,000	7,500	22,500	1/1/2018	12/31/2018
ENERGYneering Solutions Inc	Biopower & Hydro Evaluations	Sisters	25,000	24,954	46	12/6/2016	11/30/2018
University of Oregon	UO SRML Contribution - 2018	Eugene	24,999	24,999	0	3/9/2018	3/8/2019
Wallowa Resources Community Solutions, Inc.	Renewables Field Outreach		24,999	6,941	18,058	2/1/2018	1/30/2020
Robert Migliori	42kW wind energy system	Newberg	24,125	24,125	0	4/11/2007	1/31/2024
Site Capture LLC	SiteCapture Subscription	Austin	24,000	6,000	18,000	2/1/2018	1/31/2019
Clean Power Research, LLC	WattPlan Software	Napa	20,000	20,000	0	11/17/2017	6/30/2018
Warren Griffin	Griffin Wind Project	Salem	13,150	9,255	3,895	10/1/2005	10/1/2020
OSEIA-Oregon Solar Energy Industries Assoc	OSEIA 2018 Conf. Sponsorship		7,500	7,500	0	9/1/2017	12/31/2018
Bonneville Environmental Foundation	REC/WRC Purchase 2016	Portland	7,290	4,860	2,430	1/1/2016	12/31/2018

For contracts with costs
through: 5/1/2018

Kendrick Business Services LLC	Solar Contractor Training	Albany	6,500	0	6,500	4/12/2018	5/30/2018
Portland State University	Solar TA Project Workshop		5,450	0	5,450	4/30/2018	5/30/2018
Strategic Environmental Associates	Overview Carbon Mrkts to Board	Lake Oswego	5,000	5,000	0	1/16/2018	5/31/2018
Verde	LMI Solar Working Group	Portland	5,000	5,000	0	9/11/2017	3/31/2018
NeighborWorks Umpqua	LMI Solar	Roseburg	4,000	2,600	1,400	9/11/2017	3/31/2018
Renewable Energy Total:			17,620,270	14,198,758	3,421,512		
Grand Total:			137,138,506	67,581,634	69,556,872		

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Notes on May 2018 Financial Statements

June 27, 2018

Revenue

As was the case last month, May revenues remain 6% above budget. The majority of the overage is in 838 funding from PGE (\$2.8 million) and PAC (\$1.0 million).

	<u>YTD Actual</u>	<u>YTD Budget</u>	<u>YTD Var</u>	<u>YTD %</u>	<u>PY</u>
PGE	47,535,246	44,690,465	2,844,781	6%	45,324,563
PAC	28,129,663	26,865,952	1,263,711	5%	29,183,159
NWN	13,523,855	13,063,210	460,645	4%	14,797,200
CNG	1,505,821	1,180,683	325,138	28%	1,704,962
Avista	578,435	482,029	96,406	20%	550,888
Grant Revenue	34,888		34,888	0%	
Investment Income	254,711	90,000	164,711	183%	131,240
Total	91,562,619	86,372,339	5,190,280	6%	91,692,011

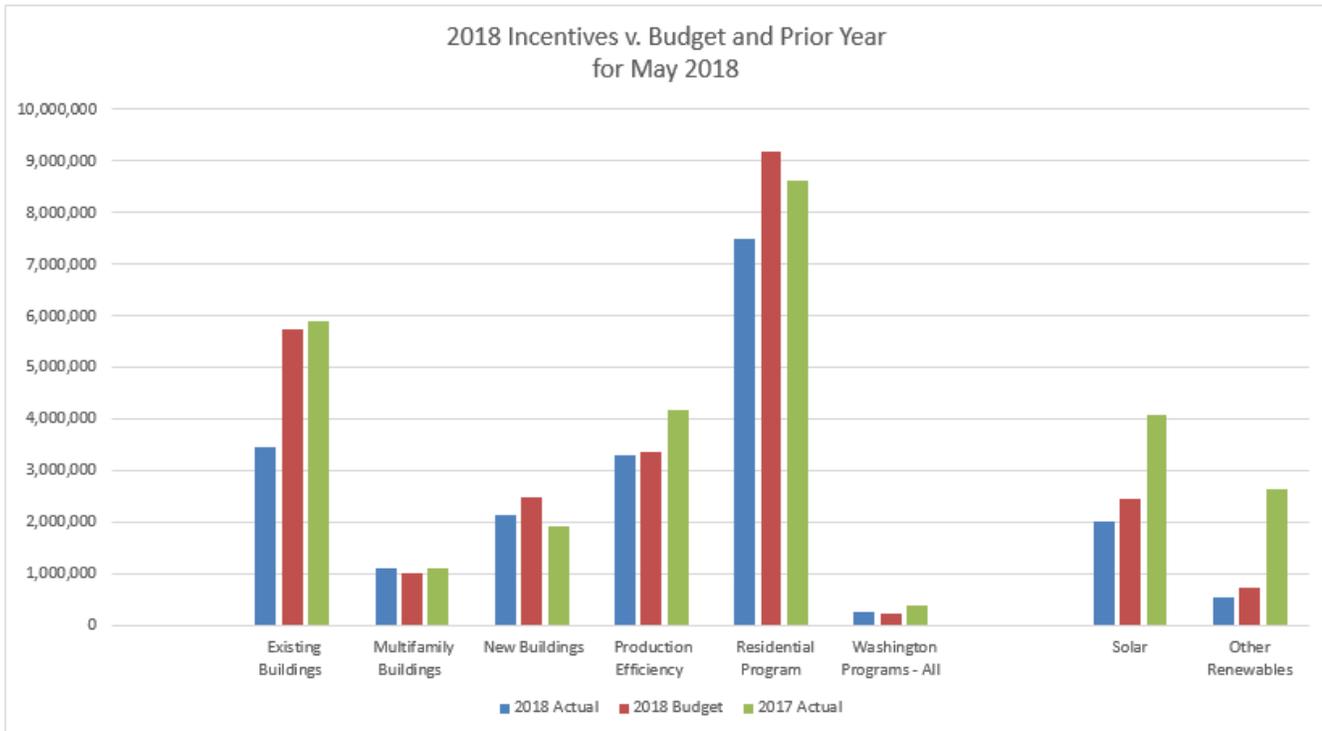
Reserves

Reserves in May increased slightly from \$83 to \$84.8 million. Last year at this time they were \$65 million. We don't anticipate a significant drawdown until mid-year incentives are processed in June and paid in July. Avista's reserve balance increased from (-\$98K) to (-\$74K). As incentives approach budgeted amounts for the other utilities (impacting the expense balances), we expect Avista will continue to approach parity.

<u>Reserves</u>	<u>5/31/18 Amount</u>	<u>Actual 12/31/17 Amount</u>	<u>% Change from Year End</u>	<u>5/31/17 Amount</u>	<u>% Change from a Year Ago</u>
PGE	30,138,355	12,210,374	147%	20,774,791	45%
PacifiCorp	16,198,397	6,211,995	161%	9,307,173	74%
NW Natural	9,204,867	3,527,721	161%	8,696,783	6%
Cascade	1,231,686	262,065		731,543	68%
Avista	(73,791)	75,716		370,598	-120%
NWN Industrial	1,933,276	2,647,086	-27%	2,054,951	-6%
NWN Washington	423,298	176,503	140%	61,144	592%
PGE Renewables	8,857,523	7,073,074	25%	6,495,514	36%
PAC Renewables	7,018,070	6,268,078	12%	6,805,192	3%
Program Reserves	74,931,681	38,452,612	95%	55,297,689	36%
Other Reserves	27,953	38,710	-	0	
Contingency Reserve	5,000,000	5,000,000	0%	5,000,000	0%
Contingency Available	4,896,020	4,641,309	5%	4,371,767	12%
Total	84,855,649	48,132,611	76%	64,669,440	31%

Expenses

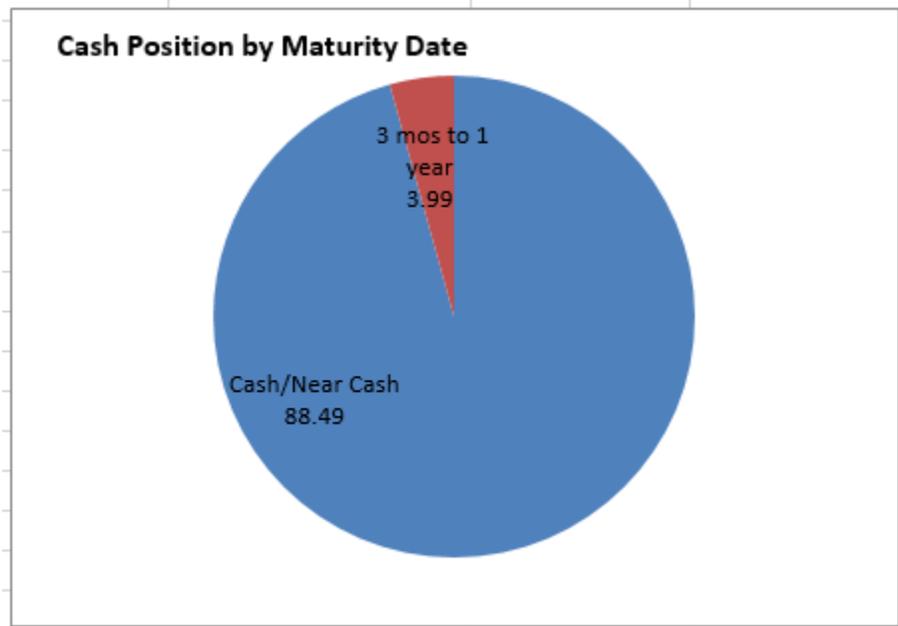
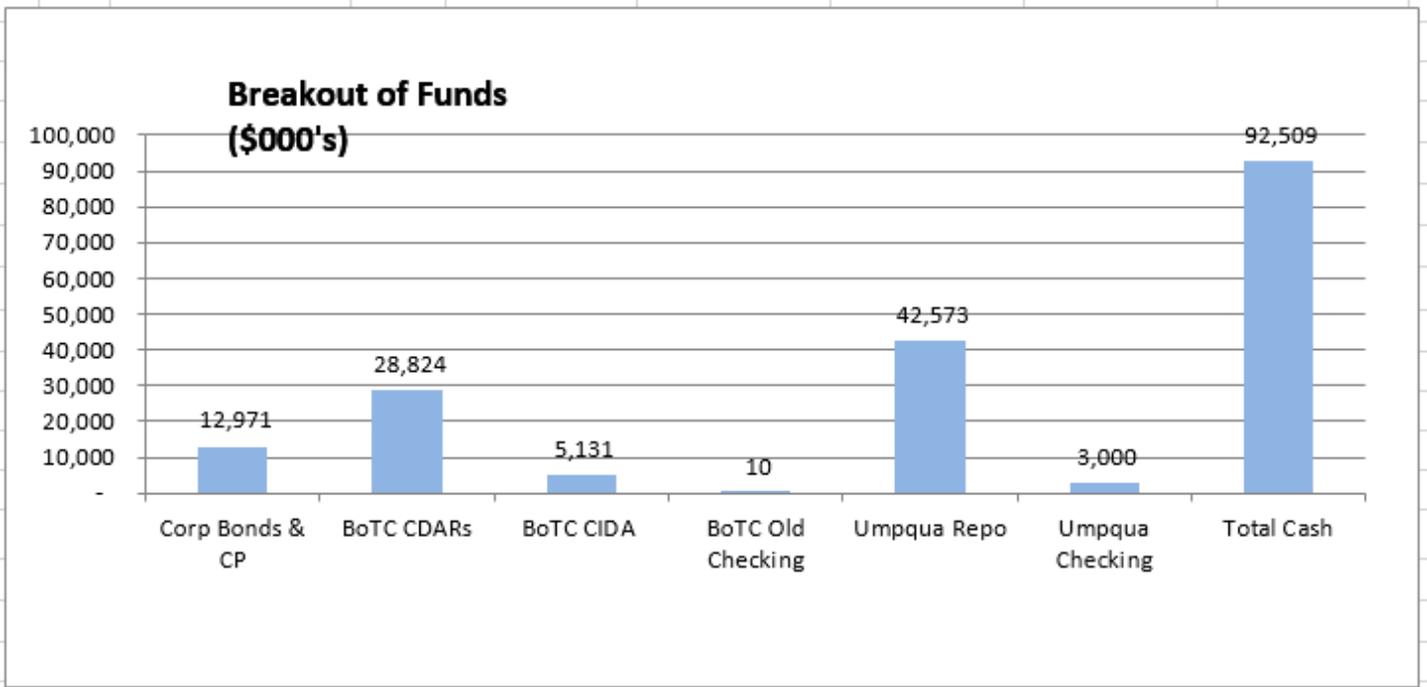
May total expenses were on track with the budget, as was incentive spending for the month. Year to date expenses remain \$6.3 million lower than expected, due primarily to YTD incentives (\$4.9 million). Existing Buildings continues to have a significant gap between actual and budget. Part of this is due to the timing curve used for budgeted incentives. They mid-year push in June could see them closing the gap.



Total Incentives			
Year-to-Date 2018			
	<u>2018 Actual</u>	<u>2018 Budget</u>	<u>2017 Actual</u>
Existing Buildings	3,454,936	5,755,943	5,889,343
Multifamily Buildings	1,110,160	1,013,183	1,116,760
New Buildings	2,137,359	2,483,757	1,939,186
Production Efficiency	3,310,969	3,356,416	4,168,951
Residential Program	7,483,601	9,181,528	8,621,895
Washington Programs - All	281,954	235,010	390,268
Solar	2,013,287	2,443,350	4,089,362
Other Renewables	560,360	744,422	2,644,071
Total Incentives	20,352,626	25,213,610	28,859,835
Energy Efficiency Only	17,778,978	22,025,837	22,126,402

Investment Status

The graphs below show the type of investments we hold and the locations where our funds are held. Our average yield increased from .82 in April to .90 in May. Rates on short term investments are starting to increase. Our CIDA interest rate has increased from 20 to 30 bps in the last month. A significant portion of our CDARs are held in very short term accounts, which puts them in the Cash Equivalent category on our Balance Sheet. We will continue to keep the timeframe of the investments relatively short until after June’s payouts are recorded.



Energy Trust of Oregon
BALANCE SHEET
May 31, 2018
(Unaudited)

	May 2018	April 2018	December 2017	May 2017	Change from one month ago	Change from Beg. of Year	Change from one year ago
Current Assets							
Cash & Cash Equivalents	63,735,643	55,923,690	52,223,904	39,766,501	7,811,952	11,511,739	23,969,141
Investments	28,733,646	34,121,374	22,721,392	32,897,201	(5,387,728)	6,012,254	(4,163,555)
Receivables	66,345	214,917	119,077	(10,978)	(148,571)	(52,732)	77,323
Prepaid Expenses	574,739	547,411	244,442	536,043	27,327	330,296	38,696
Advances to Vendors	755,728	1,511,433	2,489,421	894,194	(755,705)	(1,733,693)	(138,466)
Total Current Assets	93,866,100	92,318,824	77,798,237	74,082,961	1,547,276	16,067,864	19,783,139
Fixed Assets							
Computer Hardware and Software	3,934,165	3,926,210	3,733,082	3,733,082	7,955	201,082.80	201,083
Software Development in Progress	-	-	183,687	-	-	(183,687)	-
Leasehold Improvements	595,027	595,027	595,027	326,158	-	-	268,868
Office Equipment and Furniture	819,795	819,795	815,056	791,443	-	4,738.88	28,352
Total Fixed Assets	5,348,986	5,341,031	5,326,852	4,850,683	7,955	22,134	498,303
Less Depreciation	(4,669,894)	(4,635,984)	(4,442,925)	(3,952,499)	(33,910)	(226,968)	(717,394)
Net Fixed Assets	679,093	705,047	883,926	898,184	(25,955)	(204,834)	(219,091)
Other Assets							
Deposits	237,314	237,314	237,314	237,314	-	-	-
Deferred Compensation Asset	983,117	981,045	972,828	867,320	2,071	10,289	115,797
Note Receivable, net of allowance	430,669	430,669	263,669	263,669	-	167,000	167,000
Total Other Assets	1,651,101	1,649,029	1,473,812	1,368,304	2,071	177,289	282,797
Total Assets	96,196,293	94,672,901	80,155,975	76,349,449	1,523,393	16,040,319	19,846,844
Current Liabilities							
Accounts Payable and Accruals	8,328,222	8,810,947	29,180,745	9,159,901	(482,726)	(20,852,523)	(831,679)
Salaries, Taxes, & Benefits Payable	975,251	832,512	874,594	986,389	142,739	100,657	(11,138)
Total Current Liabilities	9,303,473	9,643,460	30,055,339	10,146,290	(339,987)	(20,751,866)	(842,817)
Long Term Liabilities							
Deferred Rent	1,050,806	1,038,714	990,344	629,252	12,093	60,463	421,554
Deferred Compensation Payable	983,117	981,045	976,378	870,870	2,071	6,739	112,247
Other Long-Term Liabilities	3,249	1,290	1,290	2,315	1,958.95	1,958.95	934
Total Long-Term Liabilities	2,037,172	2,021,049	1,968,012	1,502,438	16,123	69,160	534,735
Total Liabilities	11,340,645	11,664,509	32,023,351	11,648,728	(323,864)	(20,682,706)	(308,083)
Net Assets							
Unrestricted Net Assets	84,855,649	83,008,392	48,132,624	64,700,722	1,847,257	36,723,025	20,154,927
Total Net Assets	84,855,649	83,008,392	48,132,624	64,700,722	1,847,257	36,723,025	20,154,927
Total Liabilities and Net Assets	96,196,293	94,672,901	80,155,975	76,349,449	1,523,393	16,040,319	19,846,844

Energy Trust of Oregon
Cash Flow Statement-Indirect Method
Monthly 2018

	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>Year to Date</u>
Operating Activities:						
<i>Revenue less Expenses</i>	\$ 11,111,618	\$ 11,785,867	\$ 5,880,943	\$ 6,097,341	\$ 1,847,257	\$ 36,723,023
<i>Non-cash items:</i>						
Depreciation	60,349	60,436	37,154	35,624	33,910	227,473
Change in Reserve on Long Term Note						-
Loss on disposal of assets						-
Receivables	25,330	13,597	(10,052)	(101,297)	89,402	16,981
Interest Receivable	11,816	701	586	(36,521)	59,170	35,752
Advances to Vendors	1,053,629	717,885	(1,549,230)	755,704	755,705	1,733,693
Prepaid expenses and other costs	(423,367)	(160,906)	52,859	53,228	(29,400)	(507,586)
Accounts payable	(18,224,160)	(151,198)	(3,016,589)	1,026,311	(486,892)	(20,852,528)
Payroll and related accruals	94,882	102,231	(227,298)	(11,396)	148,977	107,396
Deferred rent and other	12,093	12,092	12,092	12,093	14,051	62,421
Cash rec'd from / (used in) Operating Activities	(6,277,810)	12,380,706	1,180,465	7,831,087	2,432,180	17,546,628
Investing Activities:						
Investment Activity (1)	3,011,583	(2,002,711)	(8,416,303)	(3,992,551)	5,387,728	(6,012,254)
(Acquisition)/Disposal of Capital Assets	(2,843)	(8,444)	(3,397)		(7,955)	(22,639)
Cash rec'd from / (used in) Investing Activities	3,008,740	(2,011,155)	(8,419,700)	(3,992,551)	5,379,773	(6,034,893)
Cash at beginning of Period	52,223,904	48,954,835	59,324,388	52,085,153	55,923,690	52,223,904
Increase/(Decrease) in Cash	(3,269,070)	10,369,552	(7,239,235)	3,838,536	7,811,953	11,511,736
Cash at end of period	\$ 48,954,835	\$ 59,324,388	\$ 52,085,153	\$ 55,923,690	\$ 63,735,643	\$ 63,735,643

(1) As investments mature, they are rolled into the Repo account.
Investments that are made during the month reduce available cash.

Energy Trust of Oregon
Cash Flow Projection
January 2018 - December 2019

	Actual					Adjusted Budget						
	January	February	March	April	May	June	July	August	September	October	November	December
Cash In:												
Public purpose and Incr funding	18,964,634	21,537,912	17,624,324	17,785,777	15,360,373	12,934,243	12,941,725	13,195,360	13,701,199	14,242,610	12,925,076	15,559,685
Investment Income	48,230	35,414	48,768	21,666	136,385	(1,520)	(1,520)	(1,520)	(1,520)	(1,520)	(1,520)	(1,520)
From Other Sources	31,744	20,495	383	(96,406)	95,652							
Total cash in	19,044,608	21,593,822	17,673,475	17,711,037	15,592,410	12,932,723	12,940,205	13,193,840	13,699,679	14,241,090	12,923,556	15,558,165
Cash Out:												
Net cash flow for the month	(25,325,256)	(9,221,560)	(16,496,406)	(9,879,952)	(13,168,186)	(16,880,441)	(15,548,422)	(13,175,960)	(16,593,869)	(15,848,689)	(17,262,427)	(25,146,619)
	(6,280,648)	12,372,261	1,177,069	7,831,085	2,424,224	(3,947,718)	(2,608,217)	17,880	(2,894,190)	(1,607,599)	(4,338,871)	(9,588,454)
Cash Flow from/to Investments	3,011,583	(2,002,711)	(8,416,303)	(3,992,551)	5,387,728							
Beginning Balance: Cash & MM	52,223,904	48,954,835	59,324,381	52,085,150	55,923,690	63,735,643	59,787,924	57,179,707	57,197,587	54,303,397	52,695,797	48,356,926
Ending cash & MM	48,954,835	59,324,381	52,085,153	55,923,690	63,735,643	59,787,924	57,179,707	57,197,587	54,303,397	52,695,797	48,356,926	38,768,472
Future Commitments												
Renewable Incentives	8,300,000	8,500,000	6,400,000	4,900,000	5,200,000	5,700,000	6,000,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000
Efficiency Incentives	84,300,000	85,700,000	88,200,000	90,600,000	89,500,000	90,700,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000
Emergency Contingency Pool	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Total Commitments	97,600,000	99,200,000	99,600,000	100,500,000	99,700,000	101,400,000	115,100,000	115,700,000	115,700,000	115,700,000	115,700,000	115,700,000

Dedicated funds adjustment: reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements
 Committed funds adjustment: reduction in available cash for commitments to Efficiency program projects with signed agreements
 Cash reserve: reduction in available cash to cover cashflow variability and winter revenue risk
 Escrow: dedicated funds set aside in separate bank accounts

Energy Trust of Oregon
Cash Flow Projection
January 2018 - December 2019

2019 Final R2 Projection												
	January	February	March	April	May	June	July	September	September	October	November	December
Cash In:												
Public purpose and Incr funding	15,970,862	20,394,304	20,722,660	17,098,459	14,743,958	13,596,738	14,573,633	13,617,897	14,099,097	15,412,038	13,580,079	16,540,633
Investment Income	25,000	15,000	15,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
From Other Sources												
Total cash in	15,995,862	20,409,304	20,737,660	17,113,459	14,763,958	13,616,738	14,593,633	13,637,897	14,119,097	15,432,038	13,600,079	16,560,633
Cash Out:												
Net cash flow for the month	(32,242,183)	(11,040,289)	(12,017,485)	(12,649,468)	(12,460,968)	(13,228,580)	(14,957,185)	(12,174,555)	(13,517,924)	(16,641,042)	(17,904,238)	(21,900,335)
	(16,246,321)	9,369,016	8,720,175	4,463,992	2,302,990	388,158	(363,552)	1,463,343	601,173	(1,209,003)	(4,304,159)	(5,339,702)
Cash Flow from/to Investments	-	-	-	-	-	-	-	-	-	-	-	-
Beginning Balance: Cash & MM	38,768,472	22,522,151	31,891,167	40,611,342	45,075,334	47,378,323	47,766,482	47,402,930	48,866,272	49,467,445	48,258,442	43,954,283
Ending cash & MM	22,522,151	31,891,167	40,611,342	45,075,334	47,378,323	47,766,482	47,402,930	48,866,272	49,467,445	48,258,442	43,954,283	38,614,581
Future Commitments												
Renewable Incentives	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000	6,600,000
Efficiency Incentives	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000	104,100,000
Emergency Contingency Pool	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
Total Commitments	115,700,000											

Dedicated funds adjustment: reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements
 Committed funds adjustment: reduction in available cash for commitments to Efficiency program projects with signed agreements
 Cash reserve: reduction in available cash to cover cashflow variability and winter revenue risk
 Escrow: dedicated funds set aside in separate bank accounts

Energy Trust of Oregon
Income Statement - Actual and YTD Budget Comparison
For the Month Ending May 31, 2018
(Unaudited)

	May				YTD			
	Actual	Budget	Budget Variance	Variance %	Actual	Budget	Budget Variance	Variance %
<u>REVENUES</u>								
Public Purpose Funds-PGE	3,052,011	2,898,852	153,159	5%	17,275,034	17,225,423	49,611	0%
Public Purpose Funds-PacifiCorp	2,320,363	2,253,049	67,313	3%	12,860,310	12,618,972	241,338	2%
Public Purpose Funds-NW Natural	1,924,111	1,711,857	212,254	12%	12,601,166	12,241,161	360,005	3%
Public Purpose Funds-Cascade	172,789	131,602	41,187	31%	1,505,821	1,180,683	325,138	28%
Public Purpose Funds-Avista	96,406	96,406	0	0%	578,435	482,029	96,406	20%
Total Public Purpose Funds	7,565,680	7,091,766	473,914	7%	44,820,766	43,748,268	1,072,498	2%
Incremental Funds - PGE	5,196,541	5,111,777	84,764	2%	30,260,212	27,465,042	2,795,170	10%
Incremental Funds - PacifiCorp	2,598,153	2,450,028	148,125	6%	15,269,353	14,246,980	1,022,374	7%
NW Natural - Industrial DSM				-				-
NW Natural - Washington			-	-	922,689	822,049	100,640	-
Grant Revenue	6,249		0	-	34,888		28,638	-
Revenue from Investments	77,214	20,000	57,214	286%	254,711	90,000	164,711	183%
TOTAL REVENUE	15,443,838	14,673,571	770,267	5%	91,562,619	86,372,339	5,190,280	6%
<u>EXPENSES</u>								
Program Subcontracts	4,707,122	4,852,297	134,815	3%	24,274,654	23,772,820	(512,194)	-2%
Incentives	6,613,862	6,398,120	(215,742)	-3%	20,352,626	25,213,610	4,860,984	19%
Salaries and Related Expenses	1,393,498	1,266,879	(128,611)	-10%	6,296,573	6,256,378	(42,186)	-1%
Professional Services	674,622	993,881	197,907	20%	2,778,155	4,586,711	1,687,205	37%
Supplies	3,489	3,958	469	12%	16,558	19,792	3,234	16%
Telephone	4,095	4,300	205	5%	19,123	21,500	2,377	11%
Postage and Shipping Expenses	544	2,042	1,498	73%	3,492	10,208	6,716	66%
Occupancy Expenses	74,898	78,703	3,805	5%	394,169	393,514	(655)	0%
Noncapitalized Equip. & Depr.	58,273	88,834	30,561	34%	365,794	458,941	93,147	20%
Call Center	14,990	15,000	10	0%	71,930	75,000	3,070	4%
Printing and Publications	934	1,879	(117)	-6%	9,193	6,896	(3,360)	-49%
Travel	18,127	19,404	322	2%	69,923	97,021	26,143	27%
Conference, Training & Mtng Exp	17,399	19,808	1,891	10%	76,080	97,542	20,943	21%
Interest Expense and Bank Fees	64		(64)		1712	1,500	(212)	-14%
Insurance	8,819	9,167	348	4%	44,030	45,833	1,804	4%
Miscellaneous Expenses	10	250	240	96%	2,496	1,250	(1,246)	-100%
Dues, Licenses and Fees	5,835	17,312	11,176	65%	63,088	103,455	40,067	39%
TOTAL EXPENSES	13,596,581	13,771,833	175,251	1%	54,839,594	61,161,970	6,322,378	10%
TOTAL REVENUE LESS EXPENSES	1,847,257	901,738	945,518	105%	36,723,025	25,210,369	11,512,656	46%

Energy Trust of Oregon
Income Statement - Actual and Prior Yr Comparison
For the Month Ending May 31, 2018
(Unaudited)

	May				YTD			
	Actual	Actual Prior Year	Prior Year Variance	Variance %	Actual	Actual Prior Year	Prior Year Variance	Variance %
REVENUES								
Public Purpose Funds-PGE	3,052,011	2,957,165	94,846	3%	17,275,034	17,571,956	(296,921)	-2%
Public Purpose Funds-PacifiCorp	2,320,363	2,273,287	47,076	2%	12,860,310	13,295,351	(435,041)	-3%
Public Purpose Funds-NW Natural	1,924,111	1,752,600	171,512	10%	12,601,166	12,532,504	68,662	1%
Public Purpose Funds-Cascade	172,789	190,039	(17,250)	-9%	1,505,821	1,704,962	(199,141)	-12%
Public Purpose Funds-Avista	96,406	17,090	79,316	464%	578,435	550,888	27,547	5%
Total Public Purpose Funds	7,565,680	7,190,180	375,500	5%	44,820,766	45,655,660	(834,894)	-2%
Incremental Funds - PGE	5,196,541	5,165,298	31,243	1%	30,260,212	27,752,607	2,507,605	9%
Incremental Funds - PacifiCorp	2,598,153	2,670,067	(71,914)	-3%	15,269,353	15,887,808	(618,454)	-4%
NW Natural - Industrial DSM			-			1,720,596	(1,720,596)	
NW Natural - Washington			-		922,689	544,100	378,589	70%
Grant Revenue	6,249		-	-	34,888		28,638	-
Revenue from Investments	77,214	31,282	45,932	147%	254,711	131,240	123,471	94%
TOTAL REVENUE	15,443,838	15,056,827	380,761	3%	91,562,619	91,692,011	(129,392)	0%
EXPENSES								
Program Subcontracts	4,707,122	4,722,536	5,054	0%	24,274,654	22,951,041	(1,333,973)	-6%
Incentives	6,613,862	9,350,298	2,736,436	29%	20,352,626	28,859,835	8,507,209	29%
Salaries and Related Expenses	1,393,498	1,116,732	(278,757)	-25%	6,296,573	5,611,615	(686,949)	-12%
Professional Services	674,622	496,281	(299,693)	-60%	2,778,155	2,155,350	(744,157)	-35%
Supplies	3,489	3,170	(319)	-10%	16,558	13,317	(3,241)	-24%
Telephone	4,095	3,727	(368)	-10%	19,123	23,679	4,556	19%
Postage and Shipping Expenses	544	778	234	30%	3,492	4,913	1,421	29%
Occupancy Expenses	74,898	83,504	8,606	10%	394,169	385,304	(8,865)	-2%
Noncapitalized Equip. & Depr.	58,273	101,776	43,503	43%	365,794	480,355	114,561	24%
Call Center	14,990	10,594	(4,396)	-41%	71,930	59,001	(12,929)	-22%
Printing and Publications	934	1,004	(992)	-99%	9,193	2,944	(7,312)	-248%
Travel	18,127	20,716	1,634	8%	69,923	80,273	9,396	12%
Conference, Training & Mtng Exp	17,399	18,333	416	2%	76,080	84,416	7,818	9%
Interest Expense and Bank Fees	64		(64)		1,712	1,678	(34)	-2%
Insurance	8,819	9,425	606	6%	44,030	43,854	(176)	0%
Miscellaneous Expenses	10	6,855	6,845	100%	2,496	17,951	15,455	86%
Dues, Licenses and Fees	5,835	17,749	11,614	65%	63,088	89,685	26,297	29%
TOTAL EXPENSES	13,596,581	15,963,478	2,366,897	15%	54,839,594	60,865,211	6,025,617	10%
TOTAL REVENUE LESS EXPENSES	1,847,257	(906,651)	2,753,908	-304%	36,723,025	30,826,800	5,896,225	-19%

Energy Trust of Oregon
Statement of Functional Expenses
For the 5 Months Ending May 31, 2018
(Unaudited)

	Energy Efficiency	Renewable Energy	Solar LMI	Total Program Expenses	Management & General	Communications & Customer Service	Total Admin Expenses	Community Solar Expenses	Total	Budget	Variance	% Var
Program Expenses												
Incentives	17,778,978	2,573,647		20,352,626					20,352,626	25,213,610	4,860,984	19%
Program Management & Delivery	24,085,320	189,333		24,274,654					24,274,654	23,772,820	(501,834)	-2%
Payroll and Related Expenses	1,787,992	549,847	20,514	2,358,353	1,114,013	845,984	1,959,997	10,757	4,329,107	4,228,988	(100,119)	-2%
Outsourced Services	1,452,822	291,511	10,000	1,754,334	205,052	555,119	760,171		2,514,505	4,193,447	1,678,942	40%
Planning and Evaluation	1,155,782	61,072		1,216,854	4,580	76,340	80,920		1,297,774	1,324,243	26,469	2%
Customer Service Management	109,096	52,056		161,152					161,152	171,924	10,772	6%
Trade Allies Network	141,157	16,440		157,596					157,596	162,262	4,666	3%
Total Program Expenses	46,511,147	3,733,906	30,514	50,275,568	1,323,646	1,477,443	2,801,088	10,757	53,087,413	59,067,293	5,979,880	10%
Program Support Costs												
Supplies	4,231	1,461	9	5,700	4,323	2,044	6,366		12,067	14,329	2,262	16%
Postage and Shipping Expenses	803	284	2	1,089	549	409	958		2,047	8,087	6,040	75%
Telephone	937	331	2	1,270	507	469	977		2,247	3,636	1,389	38%
Printing and Publications	756	163	1	920	7,266	235	7,501		8,422	5,690	(2,732)	-48%
Occupancy Expenses	111,734	39,509	243	151,486	60,483	55,983	116,466		267,952	273,049	5,097	2%
Insurance	12,481	4,413	27	16,921	6,756	6,254	13,010		29,931	31,803	1,872	6%
Equipment	951	58,326	2	59,279	515	477	992		60,271	62,440	2,169	3%
Travel	17,458	5,642	1,202	24,302	14,206	17,644	31,849		56,151	78,604	22,453	29%
Meetings, Trainings & Conferences	16,626	4,010	0	20,636	23,874	3,974	27,848		48,483	60,750	12,267	20%
Interest Expense and Bank Fees					1,712		1,712		1,712	1,500	(212)	-14%
Depreciation & Amortization	14,724	5,206	32	19,962	7,970	7,377	15,347		35,310	56,940	21,630	38%
Dues, Licenses and Fees	25,862	4,845		30,707	6,614	12,936	19,550		50,257	69,894	19,637	28%
Miscellaneous Expenses	1,503	139	1	1,643	213	197	410		2,053	867	(1,186)	-137%
IT Services	738,512	106,223	638	845,373	181,083	148,822	329,905		1,175,278	1,427,089	251,811	18%
Total Program Support Costs	946,578	230,553	2,159	1,179,290	316,070	256,822	572,891		1,752,181	2,094,677	342,496	16%
TOTAL EXPENSES	47,457,724	3,964,459	32,673	51,454,858	1,639,716	1,734,265	3,373,981	10,757	54,839,594	61,161,970	6,322,378	10%

OPUC Measure vs. 8%	5.0%
Program Support Costs	1,179,290
Total Admin Exp and Community Solar	3,384,738
Total Support and Administrative	4,564,028
	<i>divided by</i>
Total Utility Revenue (without Int Income)	91,273,020
OPUC %	5.0%

ENERGY TRUST OF OREGON
Summary of All Units
For the 5 Months Ending May 31, 2018

	ENERGY EFFICIENCY									
	PGE	PacifiCorp	Total	NWN Industrial	NW Natural	Cascade	Avista	Oregon Total	NWN WA	ETO Total
REVENUES										
Public Purpose Funding	13,394,418	9,982,142	23,376,560		12,601,166	1,505,821	578,435	38,061,982		38,061,982
Incremental Funding	30,260,212	15,269,353	45,529,565					45,529,565	922,689	46,452,254
Grant Revenue										
Contributions										
Revenue from Investments										
TOTAL PROGRAM REVENUE	43,654,630	25,251,495	68,906,125	-	12,601,166	1,505,821	578,435	83,591,547	922,689	84,514,236
EXPENSES										
Program Management (Note 3)	1,480,015	886,304	2,366,318	72,585	417,863	32,309	42,153	2,931,229	68,675	2,999,904
Program Delivery	11,175,644	6,883,210	18,058,853	254,656	2,697,264	221,046	291,104	21,522,919	157,225	21,680,144
Incentives	9,070,610	5,066,051	14,136,661	298,475	2,598,667	200,049	263,174	17,497,025	281,954	17,778,979
Program Eval & Planning Svcs.	863,107	504,330	1,367,439	18,052	214,139	15,890	24,095	1,639,615	67,179	1,706,794
Program Marketing/Outreach	865,070	555,736	1,420,805	9,461	338,428	18,148	38,923	1,825,763	21,893	1,847,656
Program Legal Services	-	-	-	-	-	-	-	-	-	-
Program Quality Assurance	4,475.00	3,594.00	8,069.00	-	2,940.00	172.00	258.00	11,439.00	-	11,439.00
Outsourced Services	119,007	74,869	193,877	4,386	30,370	2,227	3,129	233,991	1,988	235,979
Trade Allies & Cust. Svc. Mgmt.	105,104	77,188	182,295	640	58,329	3,512	5,478	250,252	0	250,252
IT Services	363,775	215,890	579,664	8,190	115,014	7,965	12,136	722,969	15,543	738,512
Other Program Expenses - all	96,892	58,377	155,267	3,443	24,920	1,888	2,698	188,218	19,847	208,065
TOTAL PROGRAM EXPENSES	24,143,699	14,325,549	38,469,248	669,888	6,497,934	503,206	683,148	46,823,420	634,304	47,457,724
ADMINISTRATIVE COSTS										
Management & General (Notes 1 & 2)	769,389	456,514	1,225,901	21,347	207,071	16,036	21,770	1,492,125	20,214	1,512,339
Communications & Customer Svc (Notes 1 & 2)	813,753	482,836	1,296,591	22,578	219,010	16,960	23,025	1,578,164	21,379	1,599,543
Total Administrative Costs	1,583,142	939,350	2,522,492	43,925	426,081	32,996	44,795	3,070,289	41,593	3,111,882
TOTAL PROG & ADMIN EXPENSES	25,726,841	15,264,899	40,991,740	713,813	6,924,015	536,202	727,943	49,893,709	675,897	50,569,606
TOTAL REVENUE LESS EXPENSES	17,927,789	9,986,596	27,914,385	(713,813)	5,677,151	969,619	(149,508)	33,697,838	246,792	33,944,630
NET ASSETS - RESERVES										
Cumulative Carryover at 12/31/17	12,210,566	6,211,801	18,422,366	2,647,089	3,527,716	262,067	75,717	24,934,948	176,506	25,111,445
Net Assets Reattributed from prior year										
Change in net assets this year	17,927,789	9,986,596	27,914,385	(713,813)	5,677,151	969,619	(149,508)	33,697,838	246,792	33,944,630
Ending Net Assets - Reserves	30,138,355	16,198,397	46,336,751	1,933,276	9,204,867	1,231,686	(73,791)	58,632,786	423,298	59,056,075
Ending Reserve by Category										
Program Reserves (Efficiency and Renewables)	30,138,355	16,198,397	46,336,751	1,933,276	9,204,867	1,231,686	(73,791)	58,632,786	423,298	59,056,075
Operational Contingency Pool										
Emergency Contingency Pool										
TOTAL NET ASSETS CUMULATIVE	30,138,355	16,198,397	46,336,751	1,933,276	9,204,867	1,231,686	(73,791)	58,632,786	423,298	59,056,075

Note 1) Management & General and Communications & Customer Service Expenses (Admin) have been allocated based on total expenses.

Note 2) Admin costs are allocated for mgmt reporting only. GAAP for Not for Profits does not allow allocation of admin costs to program expenses.

Note 3) Program Management costs include both outsourced and internal staff.

ENERGY TRUST OF OREGON
Summary of All Units
For the 5 Months Ending May 31, 2018

	RENEWABLE ENERGY			Solar LMI	Community Solar	Other	TOTAL	Approved budget	Change	% Change
	PGE	PacifiCorp	Total				All Programs			
REVENUES										
Public Purpose Funding	3,880,616	2,878,168	6,758,784				44,820,766	43,748,268	1,072,498	2%
Incremental Funding							46,452,254	42,534,071	3,918,183	9%
Grant Revenue				34,888			34,888		34,888	
Contributions									-	
Revenue from Investments						254,711	254,711	90,000	164,711	183%
TOTAL PROGRAM REVENUE	3,880,616	2,878,168	6,758,784	34,888	-	254,711	91,562,619	86,372,339	5,190,280	6%
EXPENSES										
Program Management (Note 3)	279,728	274,287	554,014	20,514	10,757	-	3,585,189	3,767,991	182,802	5%
Program Delivery	113,690	71,476	185,167	-	-	-	21,875,671	21,008,493	(867,178)	-4%
Incentives	1,236,125	1,337,522	2,573,647	-	-	-	20,352,626	25,213,608	4,860,982	19%
Program Eval & Planning Svcs.	30,383	30,688	61,072	-	-	-	1,779,818	2,630,454	850,636	32%
Program Marketing/Outreach	47,237	50,906	98,142	-	-	-	1,989,964	2,086,221	96,257	5%
Program Legal Services	-	-	-	-	-	-	-	2,500	2,500	100%
Program Quality Assurance	-	-	-	-	-	-	11,439	35,417	35,417	100%
Outsourced Services	112,072	81,297	193,369	10,000	-	-	497,364	912,603	415,239	46%
Trade Allies & Cust. Svc. Mgmt.	32,960	35,536	68,496	-	-	-	319,306	330,018	10,712	3%
IT Services	53,885	52,338	106,223	638	-	-	845,476	1,026,500	181,024	18%
Other Program Expenses - all	61,128	63,201	124,329	1,521	-	-	334,319	395,546	61,227	15%
TOTAL PROGRAM EXPENSES	1,967,208	1,997,251	3,964,459	32,673	10,757	-	51,465,613	57,409,351	5,943,738	10%
ADMINISTRATIVE COSTS										
Management & General (Notes 1 & 2)	62,564	63,512	126,076	1,301	-	-	1,639,716	2,010,182	370,465	18%
Communications & Customer Svc (Notes 1 & 2)	66,394	67,414	133,808	914	-	-	1,734,265	1,742,439	8,174	0%
Total Administrative Costs	128,958	130,926	259,884	2,215	-	-	3,373,981	3,752,621	378,640	10%
TOTAL PROG & ADMIN EXPENSES	2,096,166	2,128,177	4,224,343	34,888	10,757	-	54,839,592	61,161,970	6,322,378	10%
TOTAL REVENUE LESS EXPENSES	1,784,450	749,991	2,534,441	-	(10,757)	254,711	36,723,027	25,210,369	11,512,658	46%
NET ASSETS - RESERVES										
Cumulative Carryover at 12/31/17	7,073,073	6,268,079	13,341,154	-	38,710	9,641,309	48,132,624	43,871,177	4,261,447	10%
Net Assets Reattributed from prior year							-			
Change in net assets this year	1,784,450	749,991	2,534,441	-	(10,757)	254,711	36,723,027	25,210,369	11,512,658	46%
Ending Net Assets - Reserves	8,857,523	7,018,070	15,875,595	-	27,953	9,896,020	84,855,649	69,081,546	15,774,103	23%
Ending Reserve by Category										
Program Reserves (Efficiency and Renewables)	8,857,523	7,018,070	15,875,595	-	27,953		74,959,623			
Operational Contingency Pool						4,896,020	4,896,020			
Emergency Contingency Pool						5,000,000	5,000,000			
TOTAL NET ASSETS CUMULATIVE	8,857,523	7,018,070	15,875,595	-	27,953	9,896,020	84,855,649	69,081,546	15,774,103	23%

Energy Trust of Oregon
Program Expense by Service Territory
For the 5 Months Ending May 31, 2018
(Unaudited)

	PGE	Pacific Power	Subtotal Elec.	NWN Industrial	NW Natural Gas	Cascade	Avista	Subtotal Gas	Oregon Total	NWN WA	Solar LMI	Community Solar	ETO Total	YTD Budget	Variance	% Var
Energy Efficiency																
Commercial																
Existing Buildings	\$6,466,233	\$3,470,520	\$9,936,753	\$298,825	\$1,083,725	\$124,363	\$243,046	\$1,749,959	\$11,686,712	\$217,968			\$11,904,680	\$14,835,524	\$2,930,844	20%
Multifamily Buildings	2,347,845	793,815	3,141,660	2,819	338,711	13,442	61,940	416,912	3,558,572				3,558,572	3,578,108	19,536	1%
New Buildings	3,579,463	1,510,196	5,089,659	3,248	801,171	64,686	53,997	923,101	6,012,760				6,012,760	6,328,607	315,847	5%
NEEA	647,961	488,814	1,136,775		67,514	7,252		74,766	1,211,541				1,211,541	973,937	(237,604)	-24%
Total Commercial	13,041,502	6,263,345	19,304,847	304,892	2,291,121	209,743	358,982	3,164,738	22,469,585	217,968	-	-	22,687,553	25,716,176	3,028,623	12%
Industrial																
Production Efficiency	5,543,138	3,313,801	8,856,939	408,919	206,742	47,401	17,680	680,742	9,537,681				9,537,681	10,124,444	586,763	6%
NEEA	31,261	23,585	54,846						54,846				54,846	284,155	229,309	81%
Total Industrial	5,574,399	3,337,385	8,911,785	408,919	206,742	47,401	17,680	680,742	9,592,527				9,592,527	10,408,599	816,072	8%
Residential																
Residential Combined	6,143,105	4,934,050	11,077,155		4,005,999	233,926	351,278	4,591,204	15,668,359	457,929			16,126,288	18,078,569	1,952,281	11%
NEEA	967,834	730,118	1,697,952		420,153	45,132		465,285	2,163,237				2,163,237	2,036,052	(127,185)	-6%
Total Residential	7,110,938	5,664,169	12,775,107		4,426,152	279,059	351,278	5,056,489	17,831,596	457,929			18,289,525	20,114,621	1,825,096	9%
Energy Efficiency Program Costs	25,726,841	15,264,899	40,991,740	713,811	6,924,015	536,202	727,943	8,901,970	49,893,709	675,897			50,569,606	56,239,396	5,669,790	10%
Renewables																
Solar Electric (Photovoltaic)	1,517,772	1,636,693	3,154,465						3,154,465		34,888		3,189,353	3,597,079	407,726	11%
Other Renewable	578,394	491,484	1,069,878						1,069,878				1,069,878	1,325,496	255,618	19%
Renewables Program Costs	2,096,166	2,128,177	4,224,343						4,224,343		34,888		4,259,231	4,922,575	663,344	13%
Community Solar Development												10,757	10,757		(10,757)	
Cost Grand Total	27,823,006	17,393,076	45,216,083	713,811	6,924,015	536,202	727,943	8,901,970	54,118,052	675,897	34,888	10,757	54,839,594	61,161,970	6,322,378	10%

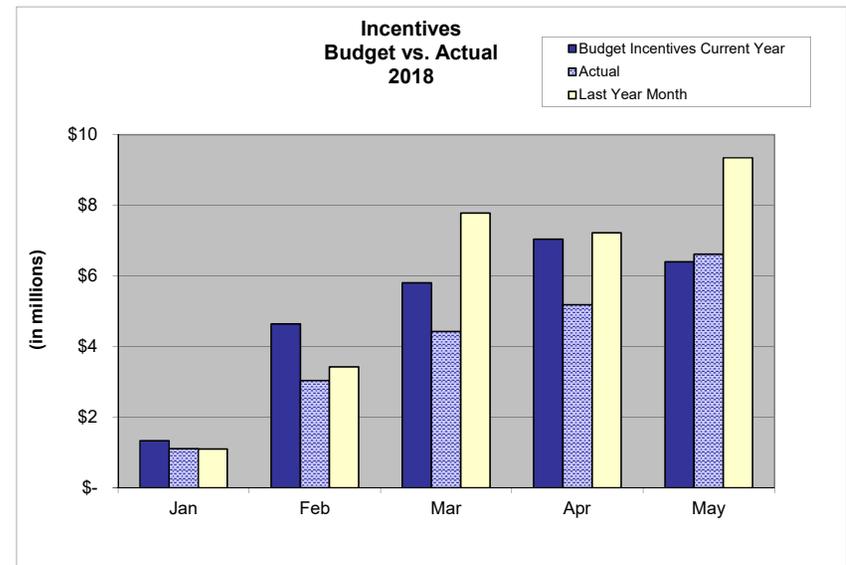
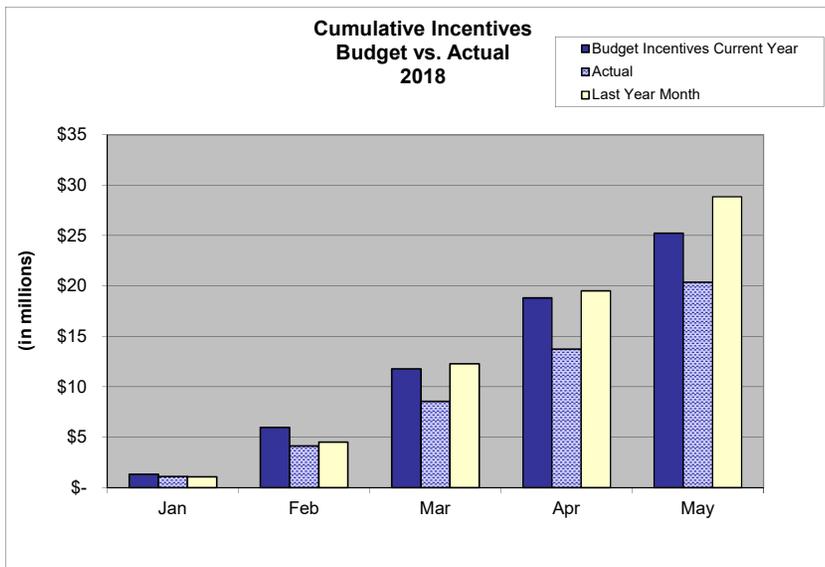
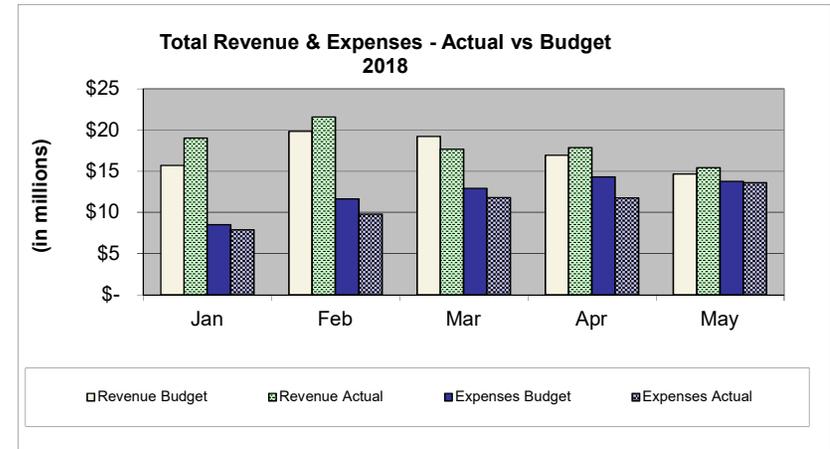
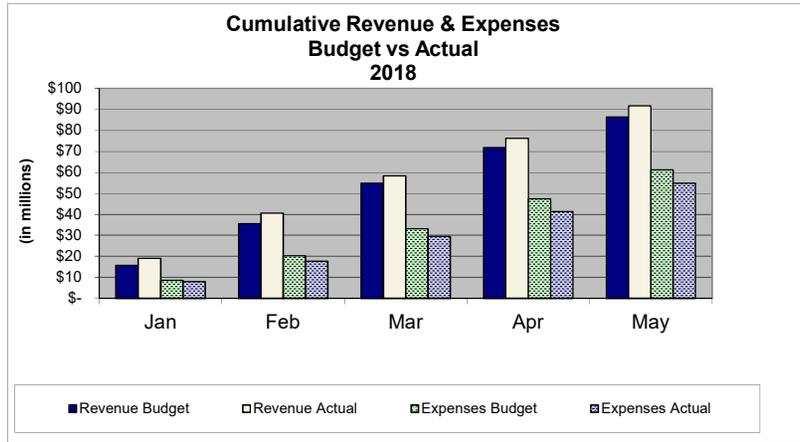
Energy Trust of Oregon
Administrative Expenses
For the 5 Months Ending May 31, 2018
(Unaudited)

EXPENSES	MANAGEMENT & GENERAL						COMMUNICATIONS & CUSTOMER SERVICE					
	ACTUAL	QUARTERLY		YTD			ACTUAL	QUARTERLY		YTD		
		BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE		BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE
Outsourced Services	\$74,114	\$351,579	\$277,466	\$195,515	\$506,549	\$311,034	\$181,544	\$341,500	\$159,956	\$555,119	\$569,167	\$14,047
Legal Services	2,601	6,250	3,649	9,538	10,417	879						
Salaries and Related Expenses	500,742	697,253	196,511	1,114,013	1,105,740	(8,273)	350,252	480,828	130,576	845,984	801,380	(44,604)
Supplies	279	725	446	2,201	1,208	(993)	28	250	222	80	417	337
Postage and Shipping Expenses	114	750	636	114	1,250	1,136				7		(7)
Printing and Publications	1,085	1,125	40	7,016	1,875	(5,141)		2,500	2,500	4	1,667	1,663
Travel	6,897	13,850	6,953	14,206	23,083	8,878	6,662	12,500	5,838	17,644	20,833	3,190
Conference, Training & Mtngs	13,409	13,250	(159)	23,858	22,083	(1,775)	1,208	5,500	4,292	3,960	9,167	5,207
Interest Expense and Bank Fees	99		(99)	1,712	1,500	(212)						
Dues, Licenses and Fees	3,564	14,062	10,498	6,614	22,237	15,623	1,211	4,500	3,289	12,936	7,500	(5,436)
Shared Allocation (Note 1)	31,462	54,211	22,748	79,265	89,683	10,418	30,311	44,553	14,242	73,369	73,706	337
IT Service Allocation (Note 2)	73,348	139,229	65,881	181,083	219,881	38,798	60,281	114,425	54,144	148,822	180,708	31,886
Planning & Eval	1,905	2,911	1,006	4,580	4,674	93	31,753	48,515	16,762	76,340	77,897	1,557
TOTAL EXPENSES	709,619	1,295,194	585,575	1,639,716	2,010,180	370,465	663,248	1,055,070	391,822	1,734,265	1,742,442	8,176

Note 1) Represents allocation of Shared (General Office Management) Costs

Note 2) Represents allocation of Shared IT Costs

Administrative Expenses 2nd Month of Quarter



For contracts with costs
through: 6/1/2018

CONTRACTOR	Description	City	EST COST	Actual TTD	Remaining	Start	End
Administration							
Administration Total:			13,435,623	5,268,539	8,167,084		
Communications							
Communications Total:			5,879,974	2,963,696	2,916,278		
Energy Efficiency							
Northwest Energy Efficiency Alliance	Regional EE Initiative Agmt	Portland	36,142,871	22,967,375	13,175,496	1/1/2015	7/1/2020
ICF Resources, LLC	2018 BE PMC	Fairfax	15,616,683	6,001,782	9,614,901	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Residential PMC	Austin	8,483,204	3,358,947	5,124,257	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 NBE PMC	Austin	6,206,575	2,673,751	3,532,824	1/1/2018	12/31/2018
Northwest Energy Efficiency Alliance	Regional Gas EE Initiative	Portland	5,864,530	2,626,630	3,237,900	1/1/2015	7/1/2020
Lockheed Martin Corporation	2018 MF PMC	Grand Prairie	4,655,000	1,774,172	2,880,828	1/1/2018	12/31/2018
Energy 350 Inc	PDC - PE 2018	Portland	3,199,704	1,244,759	1,954,945	1/1/2018	12/31/2018
Intel Corporation	EE Project Incentive Agmt	Hillsboro	2,400,000	0	2,400,000	11/13/2015	12/31/2019
TRC Engineers Inc.	2018 EPS New Const PDC	Irvine	1,946,406	742,323	1,204,083	1/1/2018	12/31/2018
Evergreen Consulting Group, LLC	PE Lighting PDC 2018	Tigard	1,875,000	815,985	1,059,015	1/1/2018	12/31/2018
Northwest Power & Conservation Council	RTF Funding Agreement		1,825,000	1,349,096	475,904	2/25/2015	12/31/2019
Cascade Energy, Inc.	PE Lighting PDC 2018	Walla Walla	1,823,250	752,401	1,070,849	1/1/2018	12/31/2018
RHT Energy Inc.	PDC - PE 2018	Medford	1,665,704	655,530	1,010,174	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Retail PDC	Austin	1,645,112	665,884	979,228	1/1/2018	12/31/2018
KEMA Incorporated	EB & SEM 15-16 Evaluation	Oakland	575,000	574,999	1	6/8/2017	5/31/2018
SBW Consulting, Inc.	PE Program Impact Evaluation	Bellevue	573,000	537,142	35,858	5/1/2016	8/31/2018
Craft3	Loan Agreement	Portland	500,000	167,000	333,000	1/1/2018	12/31/2019
Pivotal Energy Solutions LLC	License Agreement	Gilbert	490,500	233,050	257,450	3/1/2014	12/31/2019
EnergySavvy Inc.	Optix Engage Online Audit Tool	Seattle	467,000	224,000	243,000	6/1/2016	5/31/2020
Michaels Energy, Inc.	NBE '15 & '16 Impact Eval	La Crosse	425,000	47,394	377,606	3/5/2018	3/1/2019
KEMA Incorporated	EB & SEM 2017 Evaluation	Oakland	350,000	17,289	332,711	4/10/2018	5/30/2019
Balanced Energy Solutions LLC	New Homes QA Inspections	Portland	321,700	144,828	176,872	4/27/2015	12/31/2018
Craft3	Loan Agreement	Portland	300,000	300,000	0	6/1/2014	6/20/2025
ICF Resources, LLC	2018 BE PMC - WA	Fairfax	258,286	87,645	170,641	1/1/2018	12/31/2018
Alternative Energy Systems Consulting, Inc.	PE Mobile App Scoping Tool	Carlsbad	249,830	249,675	155	6/1/2016	6/27/2018
CLEAResult Consulting Inc	2018 Residential PMC - WA	Austin	238,129	86,665	151,464	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Residential PMC - CustSvc	Austin	174,000	71,930	102,070	1/1/2018	12/31/2018
ICF Resources, LLC	2018 BE PMC - DSM	Fairfax	161,119	52,323	108,796	1/1/2018	12/31/2018
Evergreen Economics	2018 EB Process Evaluation	Portland	150,000	8,583	141,418	5/14/2018	12/31/2018

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Open Energy Efficiency, Inc.	Automated Meter Data Analysis	Mill Valley	150,000	59,510	90,490	1/1/2018	12/31/2018
The Cadmus Group LLC	Residential DHP Study	Portland	140,000	11,910	128,090	4/18/2018	12/31/2018
Research Into Action, Inc.	PE Process Evaluation	Portland	138,000	9,296	128,705	4/2/2018	6/14/2019
Hitachi Consulting Corporation	SOW #20 NB RFP Coordination	Dallas	127,500	93,875	33,625	1/2/2018	7/9/2018
Research Into Action, Inc.	Fast Feedback 2018	Portland	112,000	53,187	58,813	2/15/2018	5/31/2019
Alternative Energy Systems Consulting, Inc.	PE Review of Technical Studies	Carlsbad	100,000	45,413	54,587	5/22/2017	12/31/2018
Research Into Action, Inc.	NB Market Research 2018	Portland	90,000	60,920	29,081	1/1/2018	7/1/2018
WegoWise Inc	benchmarking license	Boston	90,000	38,746	51,254	6/15/2014	12/31/2019
1000 Broadway Building L.P.	Pay-for-Performance Pilot	Portland	88,125	80,959	7,166	10/17/2014	11/1/2018
The Cadmus Group Inc.	Residential Air Conditioning	Watertown	83,550	76,529	7,021	7/1/2017	6/30/2018
CLEAResult Consulting Inc	Professional Services/Trans	Austin	81,688	69,170	12,518	10/15/2014	10/15/2018
Energy 350 Inc	Professional Services	Portland	64,062	63,993	70	12/10/2014	12/10/2018
TRC Engineers Inc.	2018 EPS New Const PDC - WA	Irvine	63,456	17,352	46,104	1/1/2018	12/31/2018
Craft3	SWR Loan Origination/Loss Fund	Portland	55,000	0	55,000	1/1/2018	12/31/2019
Research Into Action, Inc.	Evaluation MHR Pilot	Portland	52,000	24,587	27,413	5/1/2017	2/28/2019
Navigant Consulting Inc	Evaluation Consultant-DSM Proj.	Boulder	50,500	38,456	12,045	6/15/2017	6/1/2019
Ecotope, Inc.	NB - NEEA Impact Evaluation	Seattle	50,000	31,190	18,810	10/23/2017	12/31/2018
Research Into Action, Inc.	Marketing Customer Insights	Portland	48,418	0	48,418	6/14/2018	1/31/2019
Apex Analytics	Residential Windows Research	Boulder	45,000	0	45,000	5/15/2018	12/31/2018
EES Consulting, Inc	Professional Services Agmt	Kirkland	44,680	31,950	12,730	10/1/2016	9/30/2018
The Cadmus Group Inc.	Assess - Subset Load Profiles	Watertown	44,480	17,062	27,419	2/5/2018	9/1/2018
Evergreen Economics	New Home Pilot- DHP	Portland	44,000	4,574	39,426	11/1/2017	3/31/2019
Brightworks Sustainability LLC	Net Zero Fellowship Grant Agmt	Portland	43,500	24,000	19,500	4/5/2017	8/31/2018
BASE zero LLC	Quality Assurance Services	Bend	43,075	31,286	11,789	3/1/2016	12/31/2018
Research Into Action, Inc.	Lighting Tool-Mrkt Research	Portland	42,237	42,237	0	12/1/2017	6/30/2018
The Cadmus Group Inc.	Existing Homes DHP Study	Watertown	40,000	40,000	0	9/25/2017	3/31/2019
The Cadmus Group Inc.	SEM Impact Pt 2	Watertown	39,110	10,538	28,573	3/16/2018	7/1/2018
MetaResource Group	Intel Mod 1&2 Megaproject	Portland	35,000	1,297	33,703	3/1/2018	10/12/2018
The Cadmus Group Inc.	Air Conditioning Measures	Watertown	32,950	22,660	10,290	8/22/2016	8/22/2018
Research Into Action, Inc.	Evaluation - APS Pilot	Portland	31,219	16,845	14,375	7/1/2017	12/31/2018
Northwest Energy Efficiency Council	Toll Lending Lbry Sponsorship	Seattle	30,500	30,500	0	1/1/2018	12/31/2018
American Council for and Energy Efficient Economy	Research Sponsorship - 2018		30,000	30,000	0	1/1/2018	12/31/2018
MetaResource Group	Pay-for-Performance Evaluation	Portland	25,000	10,040	14,960	2/1/2018	8/15/2018
Sustainable Northwest	Klamath Ag Program	Portland	24,990	9,372	15,618	2/1/2018	12/10/2018
FMYI, INC	Subscription Agreement	Portland	24,650	24,650	0	4/25/2016	1/15/2019

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Cadeo Group LLC	Evaluation Consulting Services	Washington	24,620	5,739	18,881	5/1/2018	12/31/2018
Consortium for Energy Efficiency	Membership Dues - 2018		23,074	23,074	0	1/1/2018	12/31/2018
Earth Advantage, Inc.	Sponsorship	Portland	17,750	10,250	7,500	3/1/2017	2/28/2019
Sheepscot Creative LLC	SEM Videos	Portland	15,400	10,780	4,620	2/19/2018	7/31/2018
Research Into Action, Inc.	Research -MF Energy Savings	Portland	15,360	11,866	3,494	1/5/2018	6/30/2018
AIQUEOUS LLC	Water Market Study	Austin	15,000	0	15,000	6/18/2018	9/30/2018
KEMA Incorporated	New Bldg Evaluation	Oakland	13,000	1,847	11,153	10/1/2017	3/31/2019
American Council for and Energy Efficient Economy	ACEEE Sponsorship - 2018		12,500	12,500	0	1/1/2018	12/31/2018
Consortium for Energy Efficiency	IEM DSM Sponsorship		10,000	10,000	0	3/13/2018	12/31/2018
Research Into Action, Inc.	Review Mesure Dev. Process	Portland	10,000	0	10,000	6/12/2018	11/30/2018
Alliance For Sustainable Energy, LLC	Technical Services Agreement	Lakewood	9,609	9,609	0	3/19/2018	11/30/2018
LightTracker, Inc.	Lighting Market Analysis	Boulder	9,000	0	9,000	4/1/2018	12/31/2018
The Leede Research Group Inc	Evaluation Consultant	Manitowoc	9,000	8,995	5	5/1/2017	6/30/2018
City of Portland Bureau of Planning & Sustainability	Sponsorship - 2018	Portland	8,000	8,000	0	1/1/2018	12/31/2018
Resource Innovation Institute	2018 Event Sponsorship	Portland	7,500	7,500	0	2/7/2018	12/31/2018
Northwest Energy Efficiency Council	BOC 2018 Sponsorship	Seattle	7,300	7,300	0	1/1/2018	12/31/2018
The Cadmus Group Inc.	NB Evaluation Plan	Watertown	6,500	0	6,500	10/1/2017	3/31/2019
Shades of Green	Shades of Green Sponsorship	Portland	5,000	5,000	0	11/6/2017	10/30/2018
Social Enterprises Inc.	GoGreen Sponsorship - 2018	Portland	5,000	0	5,000	6/12/2018	10/31/2018
Travel Portland	My People's Market Sponsorship	Portland	5,000	0	5,000	5/31/2018	12/31/2018
The Cadmus Group Inc.	Impact Evaluation NB projects	Watertown	4,000	0	4,000	6/18/2018	11/30/2018
Energy Efficiency Total:			101,019,906	49,685,718	51,334,188		

Joint Programs

E Source Companies LLC	Membership Agreement	Boulder	75,607	75,607	0	1/1/2018	12/31/2018
Structured Communications Systems, Inc.	ShoreTel Phone System Install		70,345	65,287	5,059	1/1/2017	12/31/2018
CoStar Realty Information Inc	Property Data	Baltimore	48,020	46,423	1,597	6/1/2011	5/31/2018
Infogroup Inc	Data License & Service Agmt	Papillion	26,114	13,057	13,057	2/12/2018	2/12/2020
Research Into Action, Inc.	Trade Ally Survey	Portland	20,000	1,707	18,293	4/24/2018	11/30/2018
American Council for and Energy Efficient Economy	ACEEE Conference 2018		10,979	0	10,979	6/26/2018	8/31/2018
Navigant Consulting Inc	Resource Assessment Updates	Boulder	10,600	9,825	775	8/26/2016	8/26/2018
Joint Programs Total:			261,665	211,906	49,759		

Renewable Energy

Sunway 3, LLC	Prologis PV installation		3,405,000	3,261,044	143,956	9/30/2008	9/30/2028
Clean Water Services	Project Funding Agreement		3,000,000	2,013,106	986,894	11/25/2014	11/25/2039

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Oregon Institute of Technology	Geothermal Resource Funding	Klamath Falls	1,550,000	1,550,000	0	9/11/2012	9/11/2032
Farm Power Misty Meadows LLC	Misty Meadows Biogas Facility	Mount Vernon	1,000,000	1,000,000	0	10/25/2012	10/25/2027
Three Sisters Irrigation District	TSID Hydro	Sisters	1,000,000	1,000,000	0	4/25/2012	9/30/2032
Farmers Irrigation District	FID - Plant 2 Hydro	Hood River	900,000	900,000	0	4/1/2014	4/1/2034
Klamath Falls Solar 2 LLC	PV Project Funding Agreement	San Mateo	850,000	382,500	467,500	7/11/2016	7/10/2041
Old Mill Solar, LLC	Project Funding Agmt Bly, OR	Lake Oswego	490,000	490,000	0	5/29/2015	5/28/2030
City of Medford	750kW Combined Heat & Power	Medford	450,000	450,000	0	10/20/2011	10/20/2031
City of Pendleton	Pendleton Microturbines	Pendleton	450,000	150,000	300,000	4/20/2012	4/20/2032
Deschutes Valley Water District	Opal Springs Hydro Project	Madras	450,000	0	450,000	1/1/2018	4/1/2040
RES - Ag FGO LLC	Biogas Manure Digester Project	Washington	441,660	441,660	0	10/27/2010	10/27/2025
RES - Ag FGO LLC	Biogas Manure Digester - FGO	Washington	441,660	438,660	3,000	10/27/2010	10/27/2025
Three Sisters Irrigation District	TSID Funding Agreement	Sisters	400,000	0	400,000	1/1/2018	12/31/2038
Farmers Conservation Alliance	Program Support	Hood River	367,000	103,691	263,309	1/1/2018	12/31/2019
SunE Solar XVI Lessor, LLC	BVT Sexton Mtn PV	Bethesda	355,412	355,412	0	5/15/2014	12/31/2034
City of Gresham	City of Gresham Cogen 2		350,000	334,523	15,477	4/9/2014	7/9/2034
BSA Enterprises Inc	Solar Verifier Services	Sisters	200,000	116,599	83,401	8/1/2016	7/31/2018
Gary Higbee DBA WindStream Solar	Solar Verifier Services	Eugene	200,000	146,698	53,302	8/1/2016	7/31/2018
Luxurious Plumbing and Heating, Inc.	Solar Verifier Services	West Linn	200,000	202,640	(2,640)	8/1/2016	7/31/2018
RHT Energy Inc.	Verifier Services Agmt - Solar	Medford	200,000	183,918	16,083	8/1/2016	7/31/2018
City of Astoria	Bear Creek Funding Agreement	Astoria	143,000	143,000	0	3/24/2014	3/24/2034
Solar Oregon	Outreach Agreement	Portland	135,300	115,400	19,900	1/1/2015	6/30/2018
Clean Power Research, LLC	PowerClerk License	Napa	109,175	109,175	0	7/1/2017	6/30/2018
SPS of Oregon Inc	Project Funding Agreement	Wallowa	75,000	74,513	488	10/15/2015	10/31/2036
Kendrick Business Services LLC	Small Business Support Agmt	Albany	60,000	10,350	49,650	11/1/2016	6/30/2018
Kleinschmidt Associates	Evaluation Services	Pittsfield	47,400	47,609	(209)	1/1/2017	11/30/2018
OSEIA-Oregon Solar Energy Industries Assoc	Technical Training Course Dev		41,650	37,500	4,150	1/1/2017	5/30/2018
TRC Engineers Inc.	2018 EPS New Const PDC - Solar	Irvine	41,500	14,945	26,555	1/1/2018	12/31/2018
Clean Energy States Alliance	CESA Membership 17-18		39,500	39,500	0	7/1/2017	6/30/2018
Clean Energy States Alliance	2018 CESA Sponsorship		39,500	0	39,500	6/1/2018	6/30/2019
Clean Power Research, LLC	WattPlan Software	Napa	38,000	20,000	18,000	11/17/2017	6/30/2019
Craft3	NON-EEAST OBR Svc Agmt	Portland	30,000	7,500	22,500	1/1/2018	12/31/2018
ENERGYneering Solutions Inc	Biopower & Hydro Evaluations	Sisters	25,000	24,954	46	12/6/2016	11/30/2018
University of Oregon	UO SRML Contribution - 2018	Eugene	24,999	24,999	0	3/9/2018	3/8/2019
Wallowa Resources Community Solutions, Inc.	Renewables Field Outreach		24,999	9,021	15,978	2/1/2018	1/30/2020

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Robert Migliori	42kW wind energy system	Newberg	24,125	24,125	0	4/11/2007	1/31/2024
Site Capture LLC	SiteCapture Subscription	Austin	24,000	7,500	16,500	2/1/2018	1/31/2019
Kennedy/Jenks Consultants	Third Party Technical Review	Portland	15,000	0	15,000	6/11/2018	8/15/2018
Warren Griffin	Griffin Wind Project	Salem	13,150	9,255	3,895	10/1/2005	10/1/2020
OSEIA-Oregon Solar Energy Industries Assoc	OSEIA 2018 Conf. Sponsorship		7,500	7,500	0	9/1/2017	12/31/2018
Bonneville Environmental Foundation	REC/WRC Purchase 2016	Portland	7,290	4,860	2,430	1/1/2016	12/31/2018
Kendrick Business Services LLC	Solar Contractor Training	Albany	6,500	6,283	217	4/12/2018	5/30/2018
Portland State University	Solar TA Project Workshop		5,450	0	5,450	4/30/2018	5/30/2018
Seattle University	2018 Mid-Career Inst. Environm	Seattle	5,000	0	5,000	6/22/2018	12/31/2018
NeighborWorks Umpqua	LMI Solar	Roseburg	4,000	2,600	1,400	9/11/2017	3/31/2018
Renewable Energy Total:			17,687,770	14,261,036	3,426,734		
Grand Total:			138,284,938	72,390,895	65,894,043		

Tab 5

DNV·GL

Persistence of O&M Energy-Efficiency Measures

Energy Trust of Oregon

Date: October 19, 2017



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1 EXECUTIVE SUMMARY

1.1 Background

Energy Trust of Oregon's (Energy Trust) Production Efficiency (PE) and Building Efficiency (BE) programs provide incentives for a variety of measures that are based on participating industrial customers' behavioral changes. Custom operations and maintenance (O&M) and Strategic Energy Management (SEM) O&M actions are Energy Trust's primary nonresidential offerings with behavioral components. Because there is little documentation on the persistence of savings from O&M, Energy Trust currently assumes that the savings persist for an average of three years after intervention.

Measure lifetime has a tremendous impact on the cost effectiveness of these measures: being off by one year in either direction may have a large impact and could influence Energy Trust's investment decisions. For these reasons, Energy Trust hired DNV GL to perform focused research into the persistence of O&M savings to obtain a more accurate estimate of measure lifetimes. This document represents the final deliverable for that research effort.

1.2 Research goal and objectives

The primary goal of the industrial O&M persistence research is to provide better estimates of measure lifetimes for these behavioral measures. Research objectives include:

- Obtain common definitions of the types of behavioral O&M actions and categorize them by end use (e.g., boiler, compressed air, etc.)
- Determine which behavioral O&M actions are the most prevalent and are responsible for the bulk of ex ante savings
- Obtain estimates of measure lifetime for specific actions based on a literature review
- Identify specific actions that have limited supporting documentation on their persistence that would warrant further research

1.3 Research approach

DNV GL conducted a detailed literature review and analysis to characterize the types of O&M measures and associated energy saving actions to identify the types of measures or actions that have reasonable persistence. We selected a list of 68 common measures for this study and included the following measure groups: heating, ventilation and air conditioning (HVAC); compressed air and compressed air programs, waste water treatment plant (WWTP) aeration blowers, boilers, steam traps, chillers and cooling towers, air abatement, process ovens, lighting, refrigerated spaces, and refrigeration warehouses.

For each measure, we reviewed the available literature to identify existing estimates and support development of new estimates of savings persistence. Because little data is available on persistence, the team developed a method to assess persistence in the absence of literature values, categorizing measure as follows:

- Low persistence - impacted by human control and control strategies (1 year)
- Mid-range persistence - changes to measure are possible but changes usually planned (2 years)
- Highest persistence - generally more difficult to change or revert back to inefficient condition (3 years)



We assigned a persistence period to each measure based on the literature review and the above categorization approach. Additionally, we assigned estimates of relative savings of high, medium, and low based on the identified savings from literature. We provide detailed tables with information about each measure (see Appendix A-M).

1.4 Findings and Conclusions

Our research validates Energy Trust's current assumption of a 3-year average for persistence of O&M measures. Of the 68 measures we reviewed, we assessed that more than half had 3-year persistence or greater (59%).

The measures generally fell into two categories: maintenance (repairs, cleaning, routine checks) and controls (adjusting and optimizing schedules, set points, and control schedules). Repairs have a high persistence; maintenance cleaning and checking is a repetitive activity. Persistence of controls and optimization measures are dependent on the potential for the controls to be revised or overridden, reducing the efficiency gains.

Energy Trust can use the results of this research effort as a basis for prioritizing inclusion of O&M measures. For example, measures related to control strategies for equipment sequencing, staging and loading, have both high savings and high persistence. Other high savings measures include reducing air compressor loading, boiler combustion controls, compressed air annual maintenance program, and HVAC equipment scheduling. The research also provides a convenient summary of measure issues and a robust reference list.

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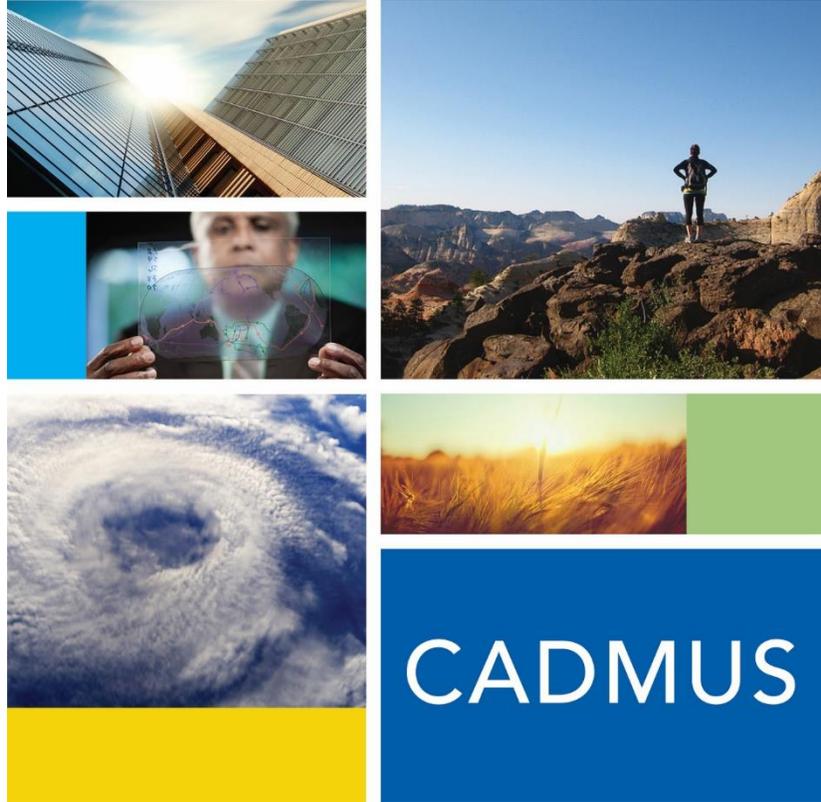
MEMO

Date: June 26, 2018
To: Board of Directors
From: Lindsey Diercksen, Senior Program Manager, Industry & Agriculture
Phil Degens, Evaluation Manager
Subject: Staff Response to the Persistence of O&M Energy-Efficiency Measures Study

The study helps validate the use of a three-year measure life that is being used for industrial and commercial operation and maintenance (O&M) energy-efficiency measures. The study identified that the lifetime of O&M measures has not been researched in a comprehensive manner and that there is little actual field data available on this topic.

O&M measure life could benefit from additional research. A recent study by Puget Sound Energy of its Industrial Systems Optimization Program found that 97 percent of O&M actions were still in place six to 30 months after being implemented. These findings provide further indication that Energy Trust's use of a three-year measure life is conservative, and might be too low. Energy Trust is in the process of commissioning a study to look at the long-term retention of industrial O&M measures, with results of the study expected to be available in 2019.

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Energy Trust of Oregon: Solar Verification Process Evaluation Report

May 10, 2018

**Energy Trust of Oregon
421 SW Oak Street, Suite 300
Portland, Oregon 97204**

The Cadmus Group, Inc.

An Employee-Owned Company • www.cadmusgroup.com

Prepared by:
Danielle Côté-Schiff Kolp
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The Cadmus Group, Inc.

Executive Summary

Working on behalf of Energy Trust of Oregon (Energy Trust), Cadmus completed an evaluation of Energy Trust's Solar program verification process. This process is used by Energy Trust to conduct quality assurance (QA) verifications on solar photovoltaic (PV) systems that receive incentives through Energy Trust's Solar Electric program. These verifications typically include technical design reviews and onsite reviews of funded installations to ensure that they comply with all relevant requirements of the Solar Electric program.

In this study, Cadmus completed detailed interviews with program staff, trade allies, and verifiers as well as an online survey with participants in the Solar Electric program. The overall goal of the research was to evaluate the effectiveness and value of the verification process.

Findings and Conclusions

Cadmus found that the verification process is adding substantial value to the Oregon solar industry. Positive impacts of the verification process include:

- **Improved Installation Quality:** Over the last several years, the issues found onsite during the verification process have decreased. For example, in 2015 approximately 28% of sites had issues found during onsite verification, compared with only 20% in 2017 (see Section 1).
- **Providing a Positive Customer Experience:** Ninety-three percent of program participants expressed a high degree of satisfaction with their overall experience, including their experience with the verifiers (e.g., professionalism, timeliness, thoroughness, ease of scheduling), and the ease of identifying and selecting a trade ally (see Section 5).
- **Public Reporting of Verification Results is Important to Participants:** The study found reporting verification results may lead to fewer installation issues. Though the solar trade ally rating process remains fairly new, each verifier reported noticing improvements in installation quality since verification results began contributing to public-facing ratings. In particular, verifiers noted a reduced incidence of minor installation issues, suspecting that trade allies conducted their work a bit more carefully to avoid lowering their ratings (see Section 3).
- **Verifiers Provide a Valuable Service to Participants and Trade Allies:** Though most customers would not be willing to procure third-party verification services on their own, a majority did indicate that these services had a tangible value that they would be willing to pay something for (see Section 3). In addition, the majority of trade allies (6 out of 10) reported benefits relating to improving installer diligence and broad benefits to the reputation of the regional solar industry attributable to the verification process (see Section 8).

The evaluation noted several additional conclusions:

- Energy Trust's incentives in conjunction with tax credits, and design review, are positive determining factors in participants installing solar electric systems (see Section 4).



- Energy Trust has made progress on the working relationship between trade allies and verifiers, but there are still some issues with trade allies having sufficient access (e.g., getting timely responses to questions) to verifiers (see Section 5).
- Remote verification, a method of verification using pictures and other information thereby allowing review without being on-site, can gain additional trade ally acceptance if it not overly burdensome in time and cost (see Section 6).
- Opportunity exists to reduce trade ally costs and streamline verification processes by reviewing Energy Trust standards against industry best practices, to identify any standards that are unnecessary (see Section 8).
- There are some issues on consistency and communication between verifiers, likely due to verifiers' high workload for project field verifications (see Section 2).

Recommendations

Though the overall process appears to be providing value to the industry, Cadmus identified several opportunities to improve the verification process, including:

- **Increase verifier consistency.** In discussing the verification process with verifiers, Cadmus noted that there are substantial differences in how verifiers conduct their work. For example, verifiers provided variable responses about time spent onsite, necessity of accessing rooftop equipment, and how frequently the verifier might open and inspect enclosures containing wiring for PV system equipment. Trade allies also expressed frustration at the variability between verifiers. Energy Trust may consider steps to standardize the level of verification rigor between verifiers.
- **Increase the number of verifiers or accelerate remote verification.** If Energy Trust intends to continue with the same level of verification, they may need to increase the number of verifiers or accelerate remote verification to reduce heavy workloads and minimize delays (by the conclusion of this report, the number of verifiers had decreased). If, however, Energy Trust sees a persistent decline in applications as a result of the discontinuation of the Residential Energy Tax Credits, Energy Trust may want to delay adding new verifiers until applications return to levels seen during this evaluation.
- **Identify specific inputs required** from trade allies and minimize additional requests. Too much additional work required of trade allies erases the marginal value of the incentives. Energy Trust should consider convening a focus group of trade allies to discuss modifications to requirements and standards that all parties may find an agreeable balance to provide the necessary information for verification without undue strain.

In addition to the existing verification process, roll-out of the remote verification process should continue.

- **Continue pursuing remote verification.** Remote verification is beginning to show promise but is not yet established. It is generally accepted by trade allies and has the potential for large cost and time savings for Energy Trust verifiers.

MEMO

To: Board of Directors
From: Jeni Hall, Sr. Project Manager – Solar
Sarah Castor, Evaluation Sr. Project Manager
Date: June 28, 2018
Re: Staff Response to the Solar Verification Process Evaluation

Energy Trust of Oregon is one of the few solar program implementers in the U.S. that verifies all incentivized solar electric systems. Verification is intended to ensure that systems are designed and installed to maximize generation, protect customer and ratepayer investments and support a sustainable solar electric industry in Oregon. Energy Trust undertook a process evaluation of its solar verification services with the goal of assessing the value these services provide to customers, trade ally contractors and the Oregon ratepayers who fund the organization.

The evaluation concluded that, in alignment with its goals, Energy Trust's solar verification process improves installation quality, provides a positive customer experience and provides value to trade allies. The evaluation also noted that the star rating system implemented in 2017 for solar trade allies is seen as useful by customers and, according to verifiers, appears to improve installation quality.

As noted in the evaluation, the Solar program currently operates with fewer verifiers than in 2017 due to two verifiers retiring. Energy Trust is open to adding additional verifiers and will release a request for qualifications (RFQ) for verification services in summer 2018.

Given uncertainty about future project volume, Energy Trust is attempting to make the program scalable and responsive to market demands. To this end, Energy Trust has also implemented process changes to assist with technical design review on simple residential projects and is making greater use of remote verification. As new verifiers are added, Energy Trust will emphasize consistency in verification practices through verifier training.

At this time, 22 trade allies are approved for remote verification using Site Capture, an internet-based tool, and Energy Trust plans to continue to approve trade allies for remote verification based on their installation quality. Energy Trust has seen positive results so far and continues to support trade allies as they incorporate quality management processes into their internal workflows and use Site Capture to create photo commissioning reports.

While the evaluation determined that the program's verification services provide value, it noted that quantifying that value in dollars is challenging. Energy Trust is committed to continuous improvement of program efficiency and effectiveness. Energy Trust will explore the evaluator's suggestions for quantifying benefits in an effort to compare benefits to program costs and make the best use of resources.

PINK PAPER

DNV·GL

Impact Evaluation of the 2015–2016 Existing Buildings Program

Energy Trust of Oregon

Date: 6/25/2018



0 EXECUTIVE SUMMARY

Energy Trust of Oregon (Energy Trust) hired DNV GL to complete an impact evaluation of Energy Trust’s 2015–2016 Existing Buildings Program. This report presents the methods, results, and findings of the evaluation. The goal of the evaluation was to improve savings estimates and enhance the Existing Buildings Program’s effectiveness in delivering savings to customers. In addition, the report also provides insights regarding strategic energy management (SEM) and current market penetration of tubular light-emitting diode (TLED) lamps.

0.1 Program overview

The Existing Buildings program began in March 2004 and is implemented by a program management contractor. ICF International has been the PMC since January 1, 2013. The program has four main tracks: Custom, Lighting (including standard, direct-install, and street lighting measures), Standard (prescriptive), and Strategic Energy Management (SEM). This program acquired 24% of the electric energy savings¹ and 25% of the gas savings^{2,3} acquired by all Energy Trust efficiency programs.

- In 2018, this program is expected to provide 26% of all electricity savings and 24% of all gas savings acquired by Energy Trust in the program year.⁴

0.2 Savings claimed

Table 1 shows the gross claimed program savings by track, years, and fuel included in the program tracking data provided to DNV GL. The values shown are the site-level “working” savings listed in the data provided. These savings do not include adjustments for prior realization rates, net-to-gross, or transmission and distribution.

Table 1: Claimed energy savings, by year, fuel, and track

Program Track	Data Lines		Electricity Savings (kWh)		Gas Savings (therms)	
	2015	2016	2015	2016	2015	2016
Custom	263	252	26,045,331	25,840,900	789,124	654,306
Standard Lighting	7,976	7,268	66,159,552	77,678,006	0	0
Standard Non-Lighting	1,393	1,461	6,515,821	10,590,409	559,703	753,615
Capital Measures Only	9,632	8,981	98,720,704	114,109,315	1,348,827	1,407,921
Strategic Energy Management	114	168	10,330,780	9,806,709	539,194	481,771
Grand Total	9,746	9,149	109,051,484	123,916,024	1,888,021	1,889,692

¹ Evergreen Economics, Report to Legislative Assembly on Public Purpose Expenditures, January 2015 – December 2016, FINAL 2 Year Report May 25, 2017. https://www.energytrust.org/wp-content/uploads/2017/08/2017_2-Year-PPC-Report_Final_Revised_05-25-17.pdf

² 2015 Annual Report to the Oregon Public Utility Commission & Energy Trust Board of Directors, ENERGY TRUST OF OREGON APRIL 15, 2016, UPDATED OCTOBER 24, 2016 https://www.energytrust.org/wp-content/uploads/2016/12/2015.Annual.Report.OPUC_with_NEEA.pdf

³ 2016 Annual Report to the Oregon Public Utility Commission & Energy Trust Board of Directors, ENERGY TRUST OF OREGON APRIL 14, 2017, UPDATED DECEMBER 15, 2017 https://www.energytrust.org/wp-content/uploads/2017/04/Energy.Trust_2016.Annual.Report.OPUC.pdf

⁴ Excludes “Existing Multifamily”. Energy Trust 2018 Budget and Action Plan. https://www.energytrust.org/wp-content/uploads/2017/12/APPROVED_Budget_and_Action_Plan_2018_web.pdf

0.3 Evaluation results

Table 2 shows the evaluated savings by track and program year. Table 3 provides the final program and track level realization rates achieved.

Table 2: Evaluated energy savings, by year, fuel, and track

Program Track	Electricity Savings (kWh)		Gas Savings (therms)	
	2015	2016	2015	2016
Custom	24,525,378	22,222,244	637,221	678,824
Standard Lighting	65,497,956	73,017,326	N/A	N/A
Standard Non-Lighting	4,980,109	10,032,315	423,695	572,747
Capital Measures Only	94,618,760	104,828,006	1,061,256	1,224,990
Strategic Energy Management	9,216,657	9,038,775	446,946	546,458
Grand Total	103,823,011	113,872,754	1,506,080	1,790,532

Table 3: Program realization rates, by year, fuel, and track

tracks	Electricity Realization Rates			Gas Realization Rates		
	2015	2016	Total	2015	2016	Total
Custom	94%	86%	90%	81%	104%	91%
Standard Lighting	99%	94%	96%	N/A	N/A	N/A
Standard Non-Lighting	76%	95%	88%	76%	76%	76%
Capital Measures Only	96%	92%	94%	79%	87%	83%
Strategic Energy Management	89%	92%	91%	83%	113%	100%
Existing Buildings Program	95%	92%	93%	80%	95%	88%

0.4 Historic capital measure performance

Table 4 and the charts on the following page show historic program performance. The table and charts do not include the SEM track which was added to the Existing Buildings program in 2015.

Table 4: Historic program performance, excluding SEM

Program Year	Verified Electric Savings (MWh)	Electric Realization Rate	Verified Gas Savings (therms)	Gas Realization Rate
2008	41,887	99%	746,564	87%
2009	63,537	85%	705,644	75%
2010	91,884	107%	1,486,729	86%
2011	98,776	91%	2,148,020	101%
2012	86,911	95%	1,174,676	79%
2013	79,612	88%	911,922	67%
2014	82,699	81%	973,143	72%
2015	94,992	96%	1,061,316	79%
2016	104,962	92%	1,228,416	87%

Figure 1: Historic Non-SEM program electric savings and realization rates

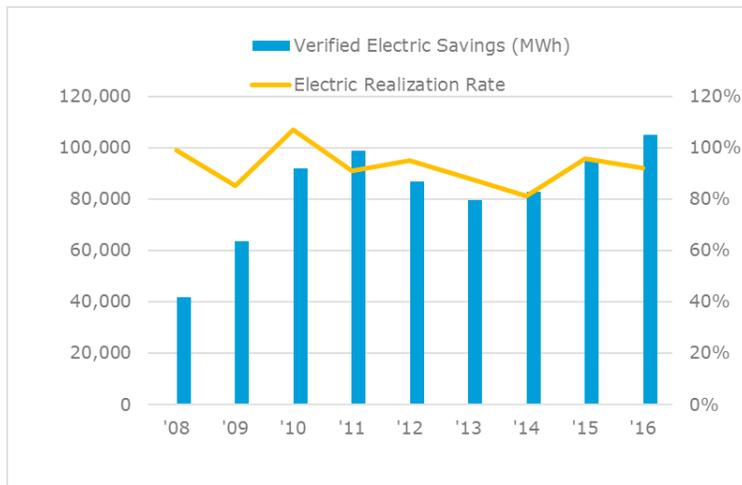
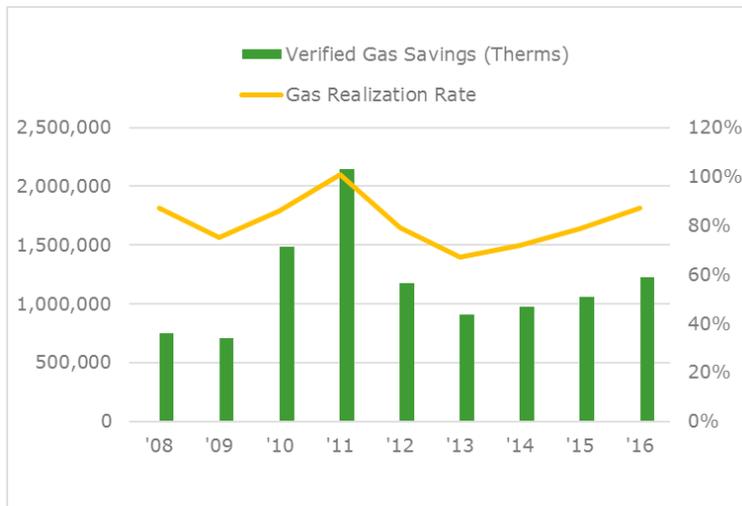


Figure 2: Historic Non-SEM program gas savings and realization rates



0.5 Historic SEM performance

Table 5 and the charts that follow show historic SEM performance over time.

Table 5: Historic SEM program performance

Program Year	Verified Electric Savings (MWh)	Electric Realization Rate	Verified Gas Savings (therms)	Gas Realization Rate
2012	7,351	139%	-18,452	-15%
2013	8,988	103%	174,390	47%
2014	11,514	89%	690,639	160%
2015	9,217	89%	446,946	83%
2016	9,039	92%	546,458	113%

Figure 3: Historic SEM program electric savings and realization rates

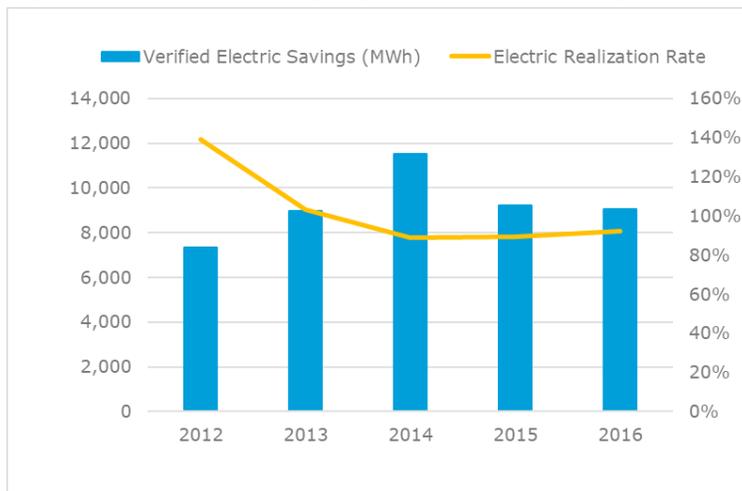
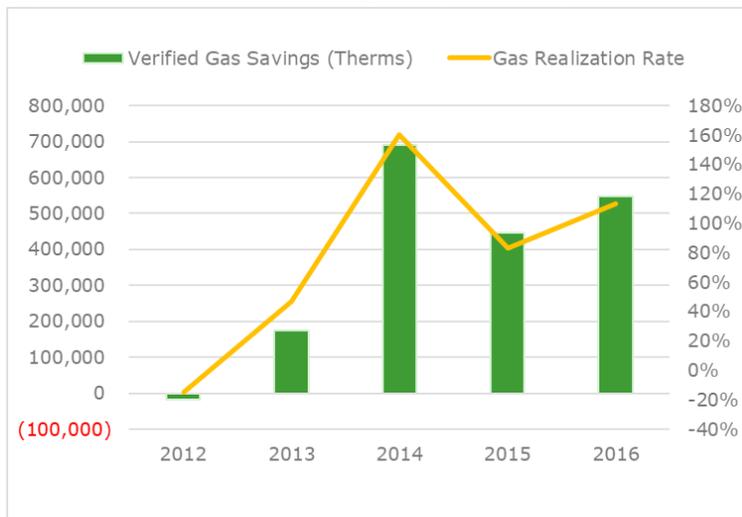


Figure 4: Historic SEM program gas savings and realization rates



0.6 Evaluation findings and recommendations

0.6.1 Lighting recommendations

- **Finding** – In a limited number of cases, the evaluation estimated significantly different savings from the program, at retail buildings more often than other building types. The difference in savings was due primarily to differences in the annual hours of use estimated by the evaluation and those estimated by the program.
 - **Recommendation** – Given the frequency of over- and under-estimating operating hours, program staff should emphasize the importance of accurate estimates of operating hours during training for trade allies. DNV GL does not recommend any structural program change to address this. Any change would likely increase program complexity with no assurance that it would improve estimates of savings.
- **Finding** – The Existing Buildings program did not account for the effect of reduced lighting power on building HVAC systems. This has the potential to result in an overestimation of the societal value delivered by the program. The conclusions of the previous evaluation report⁵ are supported by DNV GL. Across the projects evaluated, DNV GL estimates that interactive effects reduce interior lighting electricity savings by 1% (approximately 146,000 kWh) and increase gas consumption at a rate of 2.5 therms per MWh of lighting energy saved (approximately 36,400 therms).
 - **Recommendation** – Energy Trust should include estimates of interactive effects when calculating the societal value of this program. Energy Trust should consider changes to its savings calculation workbook, but weigh the changes against the added workbook complexity required. Future impact evaluations should continue to estimate the impact of lighting projects on all building systems.

0.6.2 TLED lighting specific recommendations

- **Finding** – General satisfaction with TLEDs is high and performance issues are minimal. Out of 44 survey participants, 43 gave their TLEDs a 4 out of 5 rating; one participant gave a 3 rating. There was only one report of buzzing and flickering (which started after a fire at a local substation caused a power surge) and one report of ballast failure. Over 90% have not removed any lamps or fixtures since the retrofit, another indication of satisfaction with lighting system performance.
 - **Recommendation** – Continue supporting the installation of TLEDs. No systematic concerns were identified that require a program change to address.

0.6.3 Measure Approval Documents recommendations

- **Finding** – The measure approval documents (MADs) reviewed do not provide sufficient transparency and traceability to support reliable savings estimates. Energy Trust has been updating the format and content of these documents over time and the documents reviewed for this evaluation cover multiple stages of development.
 - **Recommendation** – DNV GL discusses this finding further and provides multiple recommendations to address it within the standard track evaluation section. The recommendations focus on increasing transparency and traceability within the documents. Additionally, DNV GL recommends that Energy Trust develop and implement a plan to transition from a system with supporting documentation

⁵ Energy Trust of Oregon, Impact Evaluation of the 2013-2014 Existing Buildings Program, Prepared by ADM Associates Inc., 02/09/17. Available at: https://www.energytrust.org/wp-content/uploads/2017/02/EB_Impact_Evaluation_2013_2014.pdf

stored on internal servers to one that makes the methodologies, assumptions, and values used readily available to the public on the Energy Trust website.

0.6.4 Standard measure recommendations

- **Finding** – DNV GL identified multiple opportunities to improve the accuracy and reliability of savings estimates for multiple standard measures. DNV GL discusses these findings further and provides multiple recommendations to address them within the standard track evaluation section. Below is a summary of the recommendations.
 - **Power Strips** – Energy Trust should adjust the assumptions for leave-behind power strips and initiate research on purchased power strips. Leave behind power strip savings are unreliable.
 - **ENERGY STAR** – Energy Trust should consider using the ENERGY STAR calculators more directly and reduce use of program-specific assumptions. The assumptions used by the program are not sufficiently documented.
 - **Refrigeration** – Energy Trust should review the assumptions and methods used to estimate refrigeration measure savings. Energy Trust should confirm that the correct savings are used in the tracking database for the measures installed.
 - **Food Equipment** – Energy Trust should assume the standard gas fryer vat size instead of the large fryer vat size when estimating savings. Additionally, Energy Trust should consider standard practice research to document the current baseline for lost opportunity kitchen equipment purchases.
 - **Boilers** – Energy Trust should update the savings assumptions for condensing boilers to account for back-up capacity that is installed, but rarely operated. Energy Trust should consider future research to assess the efficiency of lost opportunity baseline equipment.

0.6.5 Custom recommendations

- **Finding** – DNV GL found the models developed by the program to be robust. DNV GL did not identify any systemic errors in the energy savings analysis, but errors did exist in the projects reviewed.
 - **Recommendation** – Final reported savings based on eQuest simulation models should use parametric runs to estimate the impact of measure combinations. Final reported savings based on Trane Trace simulation models should use a modelling alternative that includes all measures installed. DNV GL recommends using standard weather files and providing the weather files along with the energy model files.
 - **Recommendation** – DNV GL believes the following adjustments will improve Energy Trust's program: increase documentation of changes to building controls, avoid overly complex calculations, and avoid non-live calculations.

0.6.6 Strategic Energy Management recommendations

- **Finding** – Participants value energy coaches and peer-to-peer learning. Participants cite benefits from the insights provided by working closely with energy coaches to identify and execute operational and capital improvement opportunities.
 - **Recommendation** – Energy Trust should continue to identify program improvements that allow energy coaches to spend more time working with participant staff to support energy conservation opportunities. Additionally, DNV GL recommends that Energy Trust looks to further support interorganizational learning opportunities, such as is provided by the peer-to-peer learning sessions.

- **Finding** - Energy Champions & Executive Leadership are key. DNV GL finds that the participant's level of program engagement corresponds to the organization's level of buy-in by executive leadership and level of continuity of energy champion staff.
 - **Recommendation** - Based on this finding, DNV GL recommends to Energy Trust that participants exhibiting low engagement be classified under an inactive status, and the program not report savings from those participants. Reclassification as an active program participant could occur when the entity demonstrates their willingness to actively engage and support fully participating in the process.
- **Finding** - Many model baselines have or will soon expire. DNV GL observes that many enrolled facilities have baseline measurement periods that have already or will soon elapse the five-year baseline term stated in the program guidelines. Additionally, many facilities are using non-standard 'baseline adjustments.'
 - **Recommendation** - The evaluation team recommends updating expired baseline measurement periods ahead of the 2019 program year, if this is not already being performed. This will have the added benefit of reducing the quantity of older models that do not conform to the current modeling guidelines (e.g. do not use degree days) as well as eliminate complication from legacy capital projects.
- **Finding** - Measurement periods are inconsistent. The evaluation team observes inconsistency in measurement periods across participating facilities. While the measurement periods generally span from the Fall to the following Fall, the initial and final measurement months are not consistent across the program. This creates complications and uncertainty in assessing annual savings values for both the program and the evaluation teams.
 - **Recommendation** - To address this issue, DNV GL recommends that Energy Trust create a measurement schedule for current and future participants that defines when each year's period will start and stop, use this schedule across the program, and thoroughly document justifications for any deviations from the schedule that are deemed necessary.

MEMO

To: Board of Directors
From: Jay Olson, Sr. Program Manager – Commercial
Kathleen Belkhat, Program Manager – Commercial Energy Performance
Management
Sarah Castor, Evaluation Sr. Project Manager
Date: June 28, 2018
Re: Staff Response to the Impact Evaluation of the 2015-2016 Existing Buildings
Program

The evaluation of Energy Trust of Oregon's Existing Buildings program savings in 2015 and 2016, conducted by DNV GL, determined that the program saved substantial amounts of electricity and natural gas. The achieved savings are also very close to what the program estimated it would save, reinforcing the reliability of program savings estimates.

The Existing Buildings program continually strives to improve the accuracy of its savings estimates. As such, staff agree with the evaluation's recommendations to review standard measures for foodservice equipment, refrigeration and boilers to assess whether improvements of the savings estimates are possible. The program will also work with Allied Technical Assistance Contractors to ensure high quality, thorough energy simulation models and to implement parametric runs when applicable.

Given the newness of tubular light emitting diode (TLED) technology, staff is pleased to see a high level of satisfaction among participants installing the lighting measure. The positive experiences and reliable performance of TLEDs support their retention and expanded adoption in a variety of commercial building applications. Energy Trust will continue to monitor customer experience with TLEDs in the 2017 Existing Buildings impact evaluation.

The commercial Strategic Energy Management offering continues to demonstrate high value for both energy savings and customer engagement and education. The program is in the process of updating a large number of models to conform with program guidelines and reflect adjusted baseline periods. Staff expect this effort to improve the consistency and accuracy of models, as well as the ease of evaluating energy savings.

PINK PAPER

APR 13, 2018

EPS-HES Comparison Analysis

Prepared For

Energy Trust of Oregon
421 SW Oak Street, Suite 300
Portland, OR 97204

Developed By

Cadeo Group
107 SE Washington St, Suite 226
Portland, OR 97214

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MEMO

Date: June 25, 2018
To: Board of Directors
From: Andrew Shepard, Residential Senior Project Manager
Dan Rubado, Evaluation Project Manager
Subject: Staff Response to the EPS-HES Comparison Analysis Report

This staff response addresses the findings of the EPS-HES Comparison Analysis Report, which compared Energy Trust of Oregon's Energy Performance Score to the U.S. Department of Energy's Home Energy Score.

Recent changes in the home energy scoring landscape in Oregon have resulted in Energy Trust of Oregon ending its use of the Energy Performance Score (EPS™) in existing homes and re-assessing EPS in newly constructed homes. In addition, the rise of the U.S. Department of Energy's Home Energy Score (HES) necessitated an updated comparison of the EPS and HES and their relative accuracy in predicting energy consumption in Oregon homes.

This study shows that Energy Trust's EPS and energy consumption estimates align with HES in some cases, but diverge for many home types. In particular, differences between the two systems appear to stem from how they handle home size and water heating fuel. There are also differences in the scores based on heating fuel. The study found that EPS is a better tool for assessing the efficiency of new homes, primarily because HES uses a 10-point scale and new homes cluster at the top of the range, even those built to the code baseline. This is partly why Energy Trust's Residential program (previously the New Homes program) will continue using the EPS for new homes.

In certain scenarios, both EPS and HES have significant issues with the accuracy of their energy usage estimates. EPS appears to estimate energy usage for gas-heated new homes more accurately, while HES appears to estimate energy usage for gas-heated existing homes more accurately. Both scoring systems performed poorly with electric-heated existing homes. To address inaccuracies in new homes, especially electric heated homes, Energy Trust will review its modelling assumptions in REM/Rate for EPS in new homes. In addition, Energy Trust will conduct an analysis to corroborate modeled energy usage with actual consumption of real code baseline homes (not just simulated ones), which were not included in this analysis, by the end of 2018. The inaccuracies in EPS for existing homes are no longer relevant, since Energy Trust stopped using EPS in existing homes in 2017.

The National Renewable Energy Laboratory is currently in the process of calibrating the DOE2 building simulation engine that underlies HES to improve its accuracy. Energy Trust will share the results of the EPS-HES Comparison Analysis Report with NREL and the Department of Energy to support their work on calibrating DOE2. In addition to calibration, Energy Trust recommends NREL consider making changes to its HES modelling assumptions, particularly for electric-heated existing homes and gas-heated new homes, where modelling errors appear to be large.

Executive Summary

Portland City Code Chapter 17.108 states that after January 1, 2018, all home sellers in the city of Portland, Oregon must disclose a score and energy consumption estimate from the Home Energy Score (HES) scoring tool. Before 2018, Energy Trust of Oregon (Energy Trust), had been using its own home scoring system, the Energy Performance Score (EPS), to rate homes as part of its New Homes and Existing Homes programs. After this transition, Energy Trust expects that many Portland homes previously scored with EPS will require rescoring with HES when they are sold to comply with the new ordinance. To prepare for these changes to the energy scoring landscape and to prevent customer confusion, Energy Trust contracted with Cadeo to conduct a study to compare the HES and EPS scores and validate them against actual energy usage data.

This document represents the final deliverable from Cadeo's study of HES and EPS scores for both new and existing homes in Energy Trust of Oregon's service territory and is divided into two sections:

- Phase 1: Compare EPS and HES Home Score Data
- Phase 2: Validate EPS and HES Energy Usage Estimates with Utility Billing Data

In this study, Cadeo found that

- HES scores are clustered at the top of the 10 point-scale in new homes, and are distributed more uniformly across the 10 point-scale for existing homes.
- EPS annual energy consumption estimates do not effectively predict the HES annual energy consumption estimates without adjusting for building characteristics (i.e., building, vintage, size)
- Both EPS and HES scores improve when simulating energy-efficient retrofits.
- Billing analysis indicates that both EPS and HES energy consumption estimates are inaccurate for many segments of homes, though the magnitude and direction of the differences vary by home vintage, heating fuel, and home size.
- In gas-heated existing homes, HES and EPS have offsetting differences in their electric and gas energy consumption. The net result of the offset is that the HES reports and EPS reports will show similar annual energy costs.

Tab 6

Policy Committee Meeting

June 21, 2018

Attending at Energy Trust offices

Elaine Prause (Oregon Public Utility Commission), Debbie Menashe, Fred Gordon, Elaine Prause, Steve Lacey, Amber Cole, Lindsey Diercksen, Mark Wyman, Amanda Potter, Michael Colgrove, Peter West, Jed Jorgensen

Attending by teleconference

Alan Meyer—Policy Committee Chair

Board meeting presentation previews

Production Efficiency Program Delivery Contractor Recommendations

Lindsey Diercksen, industry and agriculture senior program manager, presented information about the recent competitive bid process for custom and Strategic Energy Management Program Delivery Contractor services. Staff recommend contracts with Cascade Energy, Inc. for Territory 1, Energy 350, Inc. for Territory 2 and RHT Energy, Inc. for Territory 3. The contract term for each contract would be for three years with two optional one-year extensions.

Committee members asked question about the process and noted considerations for reviewing proposals. Committee members recommended moving the recommendation to the full board.

Approve Move of Board-approved 2018 Program Funding Across Sectors

Amanda Potter, industry and agriculture sector lead, presented a request to move up to \$350,000 from the 2018 commercial sector budget to the 2018 industrial sector budget. Industrial did not budget for this transition in 2018, and the commercial sector will be approximately \$350,000 under budget in 2018. The committee supported investing in a managed PDC transition.

Loan Fund for Manufactured Home Replacement Pilot

Mark Wyman, senior residential program manager, presented a brief overview of Energy Trust's manufactured homes replacement pilot and presented a proposed resolution to authorize a direct loan agreement of \$1 million to Craft 3 using excess funds from Energy Trust's organization contingency reserves. The funds will establish a loan fund that will support the replacement of inefficient manufactured homes with energy-efficient new manufactured homes.

The proposed loan agreement between Craft 3 and Energy Trust is similar to existing agreements for Energy Trust's Savings Within Reach loan offering, with principal disbursed in installments, a 15-year term to Craft 3, 1 percent interest assessed and paid on a quarterly basis.

The committee asked questions about the details and terms of the loan fund, risk to Energy Trust, cost per manufactured home upgrade, how much other organizations are contributing to the pilot, whether utilities had been consulted, and the terms of the loan. The committee requested more detailed materials about the terms of the loan be included in materials for the July board meeting,

The committee also recommended removing the phrase "contingency funds" and instead using the term "excess funds." Debbie confirmed that the intended funds are in excess of contingency reserve targets.

The committee was comfortable with proceeding with a presentation to the full board, and requested a more clear and concise briefing paper for the board and for brief general background about the pilot to be added to the board presentation.

Policies for Review

Combined Heat and Power Policy

Debbie Menashe, legal counsel, described Energy Trust's combined heat and power policy, which is up for its regular three-year review. The role of policy committee is to review policies every year. If the policy committee makes changes to a policy, then the policy advances to the full board for approval. If there are not policy committee changes, then the policy does not go to the full board. Staff recommended no changes to the combined heat and power policy. The committee asked questions about the nature of combined heat and power projects, and approved the current policy without changes.

Other Matters

Evaluating funding opportunities beyond the public purpose charge

Michael Colgrove, executive director, presented a process document to be used to assess, communicate, and pursue funding opportunities beyond the public purpose charge. Public purpose charge funding is considered to be all revenue received by the six investor-owned utilities—PGE, Pacific Power, Northwest Natural, Cascade Natural Gas, and Avista—authorized under SB 1149, SB 838, or through the various gas utility agreements as directed by the OPUC. Changes from last policy committee discussion have been included into document.

Michael proposed several amendments to process document since the committee's last review, largely to increase transparency to the board and clarify process for smaller-scale funding opportunities.

The committee agreed the process is useful, and requested that the process include indication of the volume of non-public purpose charge funding opportunities. The committee requested additional small wording changes to the policy. The committee requested that the board receive continuous updates about funding opportunities after initial board notification. The committee also requested that the terms "organizational contingency funds" and "organizational contingency reserves" be removed from the document.

Michael will share the revised process document once more with the policy committee, and then with the full board in July.

Consent and Appointment of Members to Renewables Advisory Council

Jed Jorgensen, senior renewables program manager, presented several new Renewable Energy Advisory Council members for policy committee approval. Proposed committee members are Erik Anderson, strategic manager for renewable energy and emerging technologies with Pacific Power; Andria Jacob, senior program manager for the City of Portland Bureau of Planning and Sustainability; Alexia Kelly, CEO of the Microgrid Investment Accelerator; April Snell, executive director of the Oregon Water Resources Congress; and Jaimes Valdez, policy manager at Spark NW.

The board asked questions about ensuring a broad range of viewpoints, and approved new Renewable Energy Advisory Council members.

Annual Review of Contractors Receiving More Than \$500,000 in a Year

In accordance with board policy, Debbie provided a report of all instances in which Energy Trust has paid more than \$500,000 to an individual contractor in a calendar year. The committee asked clarifying questions and did not identify any issues with the list of contracts.

Miscellaneous Updates

Michael provided an update on organization review project, describing how implementation planning for the recommendations will begin soon along with some focus implementation of some recommendations that can be addressed in the short term.

Amber Cole, director of communications and customer service, provided an update that the Secretary of State audit has been released. The report validates that Energy Trust is managing administrative costs and meeting all performance metrics, and appropriate OPUC oversight in place.

Meeting adjourned after 11:30 a.m.

Next meeting date is Thursday, September 6, 2018, at 3:30 p.m.

PINK PAPER

Process for Evaluating Funding Opportunities beyond the PPC

July 5, 2018

Overview: This protocol outlines the process Energy Trust will follow to assess, communicate, and pursue funding opportunities beyond the public purpose charge. Public purpose charge funding is considered to be all revenue received from the five investor-owned utilities – PGE, Pacific Power, Northwest Natural - Oregon, Cascade Natural Gas, and Avista – authorized under SB1149, SB838, or through the various gas utility agreements as directed by the OPUC.

This protocol is intended to assess all new funding opportunities and, as such, does not apply to Northwest Natural funding outside of the PPC to support programs in southwest Washington.

This process does not assume that the opportunity will be pursued or developed using any of the funds derived from PPC revenues unless their use is approved by the board and OPUC and complies with any guidance provided by the utilities and the opportunity is sufficiently in alignment with PPC activities.

Criteria: Each new funding opportunity must comply with each of the following criteria.

Focus

- Aligns with Energy Trust’s purpose statement.
- Supports or enhances Energy Trust’s ability to meet its obligations under the OPUC Grant Agreement.
- Can be pursued under existing Energy Trust policies with only minimal modifications to current enterprise systems.

Customers

- Primarily benefits the ratepayers of any or all of the five utilities served by Energy Trust’s public purpose charge programs.

Strengths and Value Propositions

- Builds upon Energy Trust’s current knowledge and expertise.

Exceptions: If the funding opportunity is anticipated to bring in less than or equal to \$50,000 and complies with all of the remaining criteria OR if the funding opportunity, regardless of amount, directly supports current program goals and activities and is anticipated to be delivered through existing program design by current staff, it does not need to follow the stage-gate approval process outlined in this protocol. An Appendix A

needs to be prepared and submitted to the Director of Operations as informational only and may be retroactive. This will ensure both the Management Team and Policy Committee are aware of such activities.

Stage-gate Approval Process: All new revenue opportunities will follow a stage-gate approval process.

Stage 1: Awareness or Ideation

When a new revenue opportunity presents itself, complete the form in Appendix A and submit to the Director of Operations. The Director of Operations will present the information to the Management Team who must consent to the opportunity. Pending Management Team consensus, the Policy Committee will be notified. If the opportunity is less than \$50,000, the opportunity may be pursued.

Stage 2: Intention

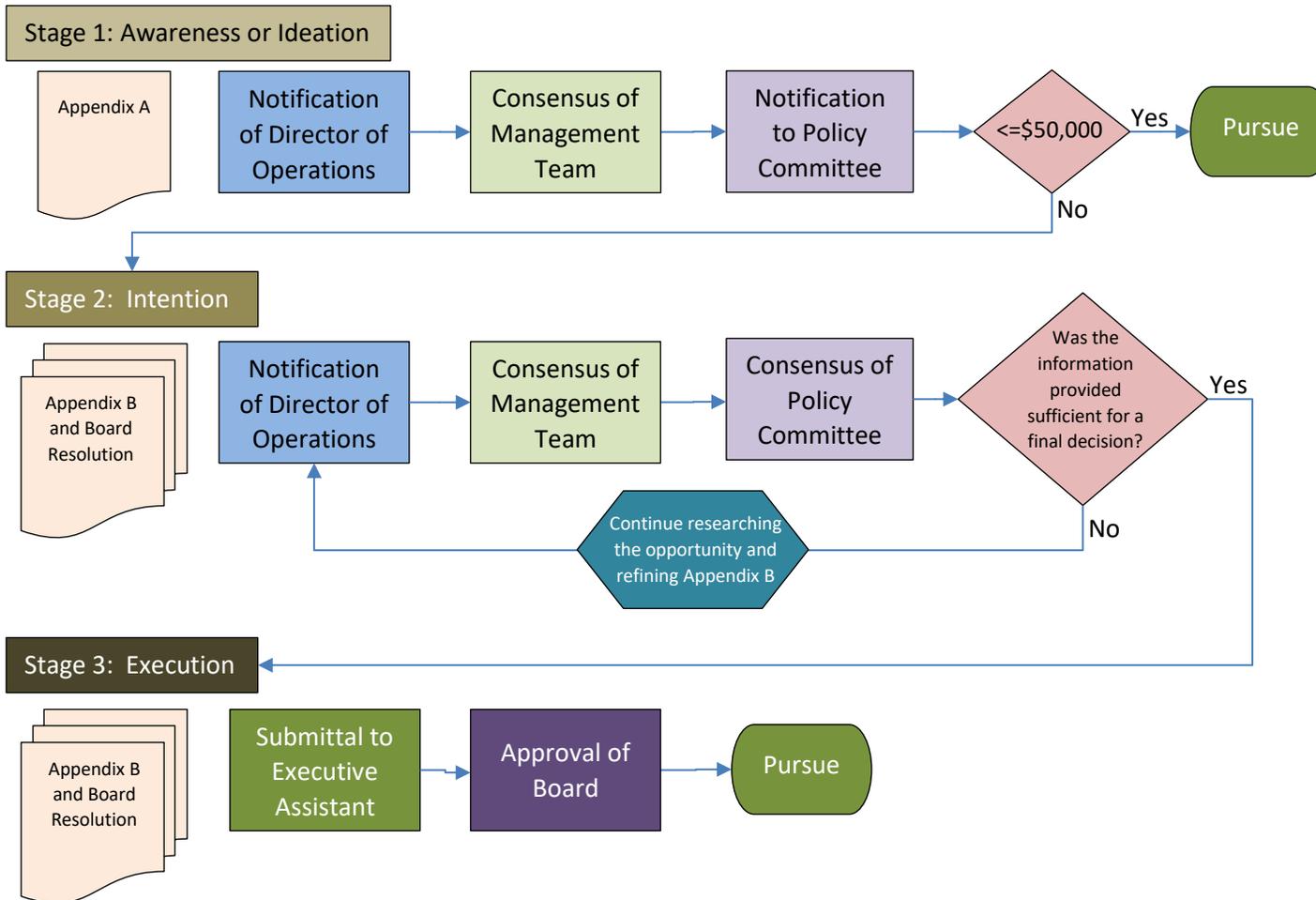
Before funds can be expended in the pursuit of the opportunity, complete the form in Appendix B using the best available data and prepare a board resolution seeking permission to expend the projected budget. Unless the board and OPUC have approved the use of PPC derived funds, any effort to pursue or develop the opportunity must be funded by non-PPC derived funding. Submit the documents to the Director of Operations for consideration and approval by the Management Team. Once approved, present to the Policy Committee for consensus. If the Policy Committee determines there is more information needed before consensus can be reached, continue researching the opportunity and updating the Appendix B until the Policy Committee reaches consensus.

Stage 3: Execution

If the Policy Committee has reached consensus, submit the Appendix B and board resolution to the Executive Assistant for inclusion in the next board agenda and action.

Stage 4: Reporting

During and immediately following pursuit of the funding opportunity, the Executive Director shall provide status reports to the Policy Committee. Such reports shall compare actual expenditure of funds and staff time to the projections as well as provide updates on the assumptions, conditions, and expectations of the funding should they change. If the funding opportunity is successfully secured, reporting on the subsequent activities will be included in other standard reporting to the Board of Directors.



Appendix A

Stage 1: Awareness or Ideation

Complete the following and submit to the Director of Operations.

Initiative Name: _____

Brief Description of Initiative: _____

Staff Lead: _____ Director(s): _____

Source of Funding: _____

Nature of Funding (e.g. direct grant, competitive solicitation, subcontract, etc.):

Anticipated Amount of Annual Revenue: _____

Anticipated Duration of Initiative (once funding is secured), in years: _____

Based on your current understanding of the opportunity, indicate that this opportunity meets the requisite criteria and provide a brief statement of explanation:

Focus

- Aligns with Energy Trust's purpose statement.
- Does not detract from Energy Trust's ability to meet its obligations under the OPUC Grant Agreement.
- Can be pursued under existing Energy Trust policies with only minimal modifications to enterprise systems.
- Brief statement of explanation: _____

Customers

- Primarily benefits the ratepayers of any or all of the five utilities served by Energy Trust's public purpose charge programs.
- Brief statement of explanation: _____

Strengths and Value Propositions

- Builds upon Energy Trust's current knowledge and expertise.
- Brief statement of explanation: _____

Appendix B

Stage 2: Intention

Evaluation of Revenue Opportunities beyond the PPC

Name of person conducting evaluation: _____

Date: _____

Question	Response
<i>Effort to Pursue Opportunity</i>	
<ul style="list-style-type: none"> Nature of this revenue opportunity: e.g. competitive solicitation, direct grant, subcontract, fee-for-service, etc. 	
<ul style="list-style-type: none"> Staff support: indicate by team how many FTEs are expected to work on pursuing this opportunity 	
<ul style="list-style-type: none"> Budget: identify the estimated amount of funding needed to pursue this opportunity including staff/agency contractor estimates 	
<ul style="list-style-type: none"> Schedule: highlight the key milestones leading up to a decision regarding this opportunity 	
<i>Compliance with Criteria</i>	
<ul style="list-style-type: none"> Purpose: describe how this opportunity fits within the purpose of Energy Trust; discuss how it complies with the strategic direction of the board 	
<ul style="list-style-type: none"> Focus: describe how this opportunity will support or enhance Energy Trust's effectiveness its PPC obligations 	
<ul style="list-style-type: none"> Customers: indicate the target audience or market for this opportunity 	
<ul style="list-style-type: none"> Strengths: detail the expertise, resources, experience, assets, etc. that uniquely qualify Energy Trust for this opportunity 	
<i>Scale</i>	
<ul style="list-style-type: none"> Expenditures: provide an estimate of the annual costs to Energy Trust to manage and/or operate this initiative including staff costs over each anticipated period of performance (if the initiative is expected to occur in phases, e.g. a design phase vs. an implementation phase, indicate the total expenditures for the design phase and the annual 	

expenditures for the implementation phase)	
<ul style="list-style-type: none"> Revenue: provide an estimate of the annual amount of revenue this initiative is expected to generate 	
<ul style="list-style-type: none"> Staff size: indicate staffing resources over each anticipated period of performance (if the initiative is expected to occur in phases, e.g. a design phase vs. an implementation phase, indicate that here and show the staff size separately for each); include a description of how existing staff will be back-filled 	
<ul style="list-style-type: none"> Schedule: highlight the major milestones in the development and implementation of this initiative 	
<ul style="list-style-type: none"> Management: indicate the position or individual who would be responsible for managing this initiative; describe the role and amount of time expected from the board, the management team and the executive director 	
Additional Considerations	
<ul style="list-style-type: none"> Overlap/conflict: note whether this initiative would conflict with or duplicate any PPC programs or activities in a way that would be confusing to current ratepayers 	
<ul style="list-style-type: none"> Risk Management: describe ways to mitigate risk to the organization including exit opportunities or “off-ramps” should we determine this opportunity is not appropriate 	
<ul style="list-style-type: none"> Administration: estimate the administrative cost allocation to this initiative 	
<ul style="list-style-type: none"> Political considerations: discuss any political sensitivities or public concerns that might not be known to the Management Team or Policy Committee 	
<ul style="list-style-type: none"> Previous experience: summarize any previous experience Energy Trust has had with the source of this opportunity noting whether that experience was positive or negative 	
<ul style="list-style-type: none"> Other: provide any other information that might be pertinent in assessing whether this is an appropriate opportunity for Energy Trust to pursue 	

Tab 7

Conservation Advisory Council Meeting Notes

June 20, 2018

Attending from the council:

Seth Wiggins (for JP Batmale), Oregon
Public Utility Commission
Holly Braun, NW Natural
Roger Kainu (for Warren Cook), Oregon
Department of Energy
Wendy Gerlitz, NW Energy Coalition
Danny Grady, City of Portland Bureau of
Planning and Sustainability
Kari Greer, Pacific Power
Lisa McGarity, Avista
Dave Moody, Bonneville Power
Administration
Jason Klotz, Portland General Electric
Al Spector, Cascade Natural Gas
Becky Robbins, Northwest Energy
Efficiency Alliance

Attending from Energy Trust:

Hannah Cruz
Oliver Kesting
Michael Colgrove
Debbie Goldberg Menashe
Fred Gordon
Tom Beverly
Mike Bailey
Jessica Iplikci
Lindsey Diercksen
Kenji Spielman

Others attending:

Sara Fredrickson, CLEAResult
Lindsey Hardy, Energy Trust board (by
phone)
John Molnar, Rogers Machinery
Jeffrey Tamburro, NW Natural
Dan Reese, CLEAResult

Executive Summary:

- CAC finalized review of their operating principles and a meeting guidance document that guides staff in how to engage CAC.
- Staff provided a recap of the board's May strategic planning workshop, including a high-level overview of the dashboard, reviewing the board's discussion on Energy Trust's unique role of value and competitive strengths.
 - Both CAC and RAC will be engaged numerous times over the next year on the development of the Strategic Planning work plan and drafting, including a joint lunch at the next meeting where they will explore Energy Trust's strengths and capabilities.
 - CAC asked the meaning behind the word "sustainable" in the purpose statement; which could be a discussion the board Strategic Planning committee has
 - The utilities see customer outreach meetings as a good opportunity to engage with their customers
- The results of the New Buildings PMC RFP was highlighted, including the board's approval of CLEAResult. Staff reviewed some key enhancements coming out of the RFP proposal that will be looked at for including in the New Buildings 2019 action plan; specifically, engaging the office market, and enhancing the program's work with multifamily projects including researching development of a low-income package
- CAC reviewed the results of a lighting tool market research. After assessing the dynamic lighting market, and the pros/cons of the existing Excel-based lighting tool for Existing Buildings, Existing Multifamily and Production Efficiency, staff will keep the existing tool and make improvements over time. CAC agreed with that assessment. BPA noted they found similar issues with their tool and came up with the same approach for going forward.

- Staff led an in-depth discussion on attribution at Energy Trust and whether the organization should continue reporting using net savings or change to reporting in gross savings. Net savings exclude free ridership and include spillover. Energy Trust is one of a small number of program administrators in the Pacific Northwest using net savings. Determining the net effect is difficult. CAC asked questions about how programs will know when to exit a market, and to learn more about why net reporting was settled on originally and whether changing to gross reporting will have any unintended consequences. There may be additional discussion on this topic at CAC, staff is looking into it. If any changes are made to how the organization reports savings, it would be determined in 2019 in time for 2020 budgeting.

1. Welcome, Old Business and Short Takes

Hannah Cruz convened the meeting at 1:35 p.m. The agenda, notes and presentation materials are available on Energy Trust's website at www.energytrust.org/about/public-meetings/conservation-advisory-council-meetings/.

Hannah asked if there were concerns or changes to the notes from the last meeting. No changes were noted, and the council adopted the notes.

2. CAC Guiding Documents

Hannah reviewed the operating principles and draft meeting guidance documents. Together, the two documents guide staff on what to bring to the council and how the information is presented.

Holly Braun: I hope the two can be considered as a package for now, but consolidated in 2019. It feels more tidy that way.

Lisa McGarity: I felt that the meeting guidance document was more specific to 2018 identified needs while the operating principles are more general.

Hannah Cruz highlighted in the operating principles the connection between CAC and the board of directors.

Holly Braun: It was good to review how we fit in. As summaries of our comments are brought to the board, it would help us to be more of an advisory group for them.

Al Spector: There is an opportunity to flesh that out more and add more clarity to our role in advising staff and the board.

Hannah Cruz: We now have a portion of the board meetings where we summarize CAC meetings.

It was noted that the charter sections A-C could be further explained. Hannah Cruz will relook at the language.

Holly Braun: On the meeting guidance document, it says to notify CAC regarding other public meetings. Are those set for the year and can that be sent out in an email?

Hannah Cruz: Most public meetings are set in the fall for the next year. We have them listed on our online events calendar and there is a one-page PDF online, too.

Holly Braun: Can we add that as a standard item at the end of these meetings?

Hannah Cruz: Yes, I can add that to our meeting agendas.

3. Recap of Strategic Planning Workshop

Energy Trust has begun work on its next five-year strategic plan. The strategic planning process will involve input from the Conservation Advisory Council and Renewable Energy Advisory Council over the next year. Hannah Cruz and Debbie Menashe presented a brief update on progress to the current 2015-2019 Strategic Plan, provided highlights on the strategic planning discussions that took place at the board of director's annual strategic planning workshop in May, and provided a high-level draft of the upcoming strategic planning development process. All materials related to the current plan and development of the upcoming plan are available online at www.energytrust.org/strategicplan.

Holly Braun: In the current purpose statement, what is meant by the word "sustainable?"

Debbie Menashe: My recollection is "sustainable" is meant to be an effect that is ongoing and can be sustained. This is a good question for the board Strategic Planning Committee to consider with the next plan.

Kari Greer: Do you have feedback or reports on customer focus groups?

Hannah Cruz: Yes, I will send them to the council.

Lisa McGarity: The online home energy survey gives recommendations. Is that data stored anywhere, and do you use it when reaching out to customers?

Debbie Menashe: The data is stored and provides opportunities for leads.

Hannah Cruz: We will share more details after the meeting.

Debbie Menashe: The last session of the workshop was the kickoff to the next strategic planning cycle. There is a formalized role for RAC and CAC to advise the board on strategic planning, and we plan to engage RAC and CAC regularly. With the guidance of a facilitator, the board started its strategic planning discussions by identifying Energy Trust's "unique role of value" and competitive strengths to discern what we do better than other organizations. When we say unique role of value we mean, "What do we uniquely deliver as a sustainable value into the market we serve?"

Lisa McGarity: One great thing in that discussion was around what you do that no one else can do. It's a very good to think about.

Debbie Menashe: Another part of the workshop was a presentation by OPUC staff. They delivered a strong voice of support for us and what we're doing. They view us as a national leader and tout our programs nationally. Their presentation was intended to give the board an equal sense of what's going on in the policy, industry and technology landscapes. Importantly, SB 1149 expires in 2025, which immediately follows the next planning period. SB 1149 was the initial basis for our funding and structure. We have to consider the impact of that sunset during the 2020-2024 period. The OPUC said it will work closely with Energy Trust and with stakeholders to discuss this due to its importance to state energy policy.

Lisa McGarity: I recall a graph of the SB 1149 portion of the funding. What does that represent as a proportion of the budget?

Hannah Cruz: That is about 40 percent [post-meeting correction: approximately 35 percent of the 2018 budgeted revenues are from SB 1149].

Debbie Menashe: SB 1149 is also 100 percent of funding for renewables and doesn't include gas funding, which is separate.

Holly Braun: My impression of the OPUC's presentation is that they support you but want you to stick to energy efficiency and not carbon reduction and other sustainability efforts. They would

work with you on metrics. There is openness, but not to change the mission. It was very positive.

Hannah Cruz: They want to help us dig into our forecasts and plans. The OPUC's Jason Eisdorfer mentioned that he was skeptical about what some charts indicated, and he wanted to dive in further.

Holly Braun: Each cycle, the savings potential always seems to be dropping off a cliff, but then we find savings. It's not as dramatic on the gas side. We've dug into it with Energy Trust in the past. I can bring some of that to CAC. It's in our NW Natural IRP. Your assumptions make up about half of the potential changes in avoided costs.

Fred Gordon: Efficiency was built up from our side. The timing and magnitude of electric savings from LED lighting has been a challenge for everyone to forecast. We have made efforts to improve our forecasts by including placeholders for unknown new measures and potential mega projects, but yes the graphs still show a big drop off in a few years after lighting. The current gas forecast is flat.

Debbie Menashe reviewed the high-level development schedule, including ongoing check-ins and engagement with CAC.

Lisa McGarity: How far out are the customer meetings scheduled? How far out will you be able to provide a schedule of where and when the meetings will be held?

Debbie Menashe: The public outreach meetings will happen from May through October 2019. We'll look at that as part of our communications and outreach plan. Your help will be appreciated. It's the first time we've had Avista with us in the process.

Kari Greer: Margie Harris [Energy Trust's former executive director] went to some Pacific Power events to talk about the strategic plan years ago. It was a great opportunity to engage with people.

4. Results from New Buildings Program Management Contract Request for Proposals

Jessica Iplikci presented the results of a request for proposals for a New Buildings Program Management Contractor. Staff had an early start to the rebid this year to help tee up planning for 2019 and 2020. The board of directors supported the staff recommendation to initiate a contract with CLEARResult. The background on the RFP and staff recommendation is included in the CAC packet, including the current objectives of the program, which includes standard, market solutions, Path to Net Zero, technical support and studies. The program team has had a lot of success in engaging owners and designers. It's a busy market. Core elements of the program will continue with enhancements from the RFP. The regional outreach model with statewide outreach will continue with expanded market reach to a broader range of market actors; training and education will continue with expanded content specifically geared for contractors and subcontractors and made available through an on-demand web platform; and new measures and technologies will be developed to expand the program's energy-saving opportunities.

Jessica noted staff plans to enhance how the program engages with the office market. One of the more recent New Buildings presentations for CAC was a market penetration analysis across a dozen building types. It highlighted low penetration in the office market. Staff gained new ideas and partnerships through the RFP that improve outreach and engagement with the office market, leverage the market solutions package for office and bring new relationships with brokers and property managers. There is a lot of demand for office space. Staff is hopeful that owners will be ready to modify their buildings, enabling the program to intervene.

Jessica said the program is looking to enhance work in multifamily projects by building on the program's success and high penetration and by adding new technologies as they become better understood. The plan is to research development of a low-income package by examining assumptions, use cases and new energy-saving strategies. Staff will also look at where they can better understand the financials of projects and develop a tool to help guide the thinking around payback and level of investment. First cost is the focus.

Lisa McGarity: How are you thinking about reaching building owners that have leased spaces?
Jessica Iplikci: Building relationships is one way. Tenants may be harder to identify, but the brokers and property managers are the ones to target. We are looking for the PMC to subcontract to bring those relationships and deliver the current incentive structure through market solutions.

Lisa McGarity: In Southern Oregon, a handful of contractors do the work, so the more they can champion energy efficiency, the better. What kind of outreach have you done with those contractors?

Dan Reese: I don't know the specifics except maintaining relationships with the local contractors in regions around the state. We'll continue working with them as we have in the past.

Jessica Iplikci: Depending on how the owner and tenant plan to modify their spaces, we hope to have the relationships in place to influence decision makers and make it easy to include upgrades. Part of this is better understanding the leasing structures. Once this is worked through, contractors can more easily include efficiency upgrades in their projects. One of the benefits of outreach staff located throughout the state is having a connected network that can dovetail into projects when they are ready to go. These relationships are important.

Jason Klotz: I'm assuming you contacted PGE?

Hannah Cruz: In regards to more specifics on 2019 budgeting and program activities, we will approach each utility in August and throughout the fall.

Lisa McGarity: You need to know the different actors and how they come into the market. It would be a helpful exercise.

Jessica Iplikci: We typically develop a logic model to look at the barriers and interventions.

5. Lighting Tool Market Research Findings

Lindsey Diercksen and Kenji Spielman provided information about the lighting tool research results. Energy Trust was investigating the possibility of developing a new lighting tool, and first conducted research to understand the challenges, benefits and the need of a new lighting tool. Staff reviewed lighting project volume and saw trends of increased LED projects and less savings per project. The current tool is Excel based, which poses some limitations yet is also a one-stop-shop for contractors using the tool. Based on CAC feedback, staff conducted research on other types of lighting tools in use not only in the Pacific Northwest but by program administrators in other regions. Feedback was received from staff, trade allies and other program administrators.

Lisa McGarity: How do they receive updates on the current Excel tool?

Lindsey Diercksen: The trade ally coordinator maintains it online through a portal for trade allies to download.

Kenji Spielman: Because it's one big download, it adds to the consistency. It added to people's familiarity with the tool. However, many distributors have their own tools they are using in parallel with ours.

Lisa McGarity: I'm assuming formulas are locked, so where do problems with formula corruption come from?

Lindsey Diercksen: Updating one portion of the tool sometimes causes inadvertent breakages in other parts.

Kenji Spielman: There are performance issues inherent to Excel, also.

Lindsey noted staff came into the project thinking that an online tool would be the solution. The third party evaluators asked the staff and users if they were interested and willing to move in that direction, and received both pros and cons to such a change.

Roger Kainu: If some are happy with the product, why are they carrying around their own?

Lindsey Diercksen: They felt that a single tool used by everyone could take away their competitive advantages. They worried that non-energy benefits such as operations, maintenance, and safety might not be included in a new tool. The online tool was also associated with previous poor experiences. We often think these things can be easy to use, but it doesn't always give the programs and the end users more flexibility.

Kenji Spielman: Many trade allies work in multiple territories, and they have one overarching tool the company uses. If the trade ally is only in Energy Trust territory, then it is possible they could just be using our tool.

Lisa McGarity: Are there other tools that could be uploaded later?

Kenji Spielman: We researched the needs and wants of stakeholders before looking into other solutions.

Lindsey Diercksen: Offline capability might be a big selling point. It didn't seem like enough value was there for the end user to build offline capability. Research didn't focus on the tool solutions in phase two as much as the other administrators and program needs.

Lindsey said coordination is important across programs as the lighting tool is used in both Production Efficiency and Existing Buildings programs.

Lindsey noted that based on market dynamics and feedback, the first recommendation is to hold on developing a new tool, and to refine the existing tool going forward.

Dave Moody: We've had a similar conversation with almost exactly the same result at BPA. Excel is unwieldy and hard to update. We struggle with that also.

Roger Kainu: I agree with your decision to hold on a new tool, and to think about whether there is a role for a national level effort that could go after federal funding. The Oregon Department of Energy can put together a proposal. I can remember this being an issue 15 or 20 years ago. Contractors have their own bandage approach.

Danny Grady: As you do move forward with refining the tool, consider the end users, like how to streamline the information needed in the lighting tool from contractor bids.

Lisa McGarity: I suggest you consider how many more years you plan to be in the lighting market and the savings you can find from exploring an easier tool with a sales piece for trade allies and more to meet the customer's needs. If you're going to do this for five years, and are using a lot of staff, it may be worth considering the trade-off.

Lindsey Diercksen: That's a good point. We need to look at the return on investment of different options.

6. Attribution Proposal and Discussion

Fred Gordon presented on attribution at Energy Trust; in other words, how Energy Trust counts the savings it reports and forecasts. The main question is how much effort Energy Trust should attempt to measure and quantify our influence on what led to savings from a specific engagement with Energy Trust. This is a discussion about what things Energy Trust measures, how Energy Trust defines things and where Energy Trust focuses its efforts. Free riders and spillover are difficult to measure. Currently Energy Trust reports in net savings, which is gross savings minus free riders plus spillover. Net savings are used because Energy Trust is working on the margin of an already active market. Energy Trust's forecast for efficiency can be added into load forecasting, so that's where the organization started. It was a conceptual match, but not a fit that can be validated.

Holly Braun: If reporting changed, would NW Natural's IRP team independently forecast savings without Energy Trust forecasts?

Fred Gordon: Utilities use our gross savings now. This is one of those things that changed since when we first started. Utilities have learned how to dovetail with our gross estimates. It's not as important as it used to be.

Fred noted there are many methods for understanding free ridership. Staff tries to simplify the definition by asking if the customer would have done it anyway without Energy Trust incentives. Staff also uses a sales mix based on past market conditions for things like LED light bulbs. This market baseline approach avoids the net versus gross issue because it considers sales of all products, efficient and inefficient. This proposal does not change that practice.

Jason Klotz: How do you currently assess free ridership? Is it through you or a contractor?

Fred Gordon: We use Fast Feedback surveys conducted by a contractor.

Jason Klotz: Would this be used as part of the criteria in a white paper for exiting a measure? Will this continue in the future?

Fred Gordon: We'll still consider our market influence and serve customers. We will still need to develop measure exit plans.

Lisa McGarity: Do you ask about price points? Like: "Would you buy this at \$X?"

Fred Gordon: Not currently. If you ask hypothetical questions, people make up answers. It can end up being useless. High free-ridership may mean it doesn't matter or it may mean that the respondent can't remember.

Fred said the Northwest Power and Conservation Council uses gross savings, as do BPA and the consumer-owned utilities.

Holly Braun: What's the difference between market transformation and efficient equipment in the baseline?

Fred Gordon: For market baseline, you're looking at the mix of products in the market and the difference this year. For market transformation, you're forecasting the way things will go without you. You are trying to accelerate and enhance.

Fred said that for the 41 percent electric savings and 50 percent gas savings that are from a net analysis (the other savings coming from market transformation and market baseline analysis) gross savings are about 13 percent higher. In some programs, it may be as much as 30 percent. It's not huge overall, but it's significant. It would change some cost/benefit ratios incrementally and impact goals. There are issues with asking people whether they would have done something. There are many things in the market that influence the answers. Some of

Energy Trust's work is invisible in the market to the customer. Sometimes the contractor stocked the efficient product. The questions can become hypothetical and less meaningful. Midstream programs are invisible to participants. It's harder to follow Energy Trust's influence. For instance, behavioral programs teach customers to operate without Energy Trust, and multi-party initiatives like PACE or home energy scoring with the City of Portland make it difficult to tell who helped the customer.

Al Spector: How is this taken into account for IRP versus programmatic planning?

Fred Gordon: It's how each utility wants it to work.

Al Spector: There can be a difference between how you're tracking versus what's set in the IRP. There can be a variance. Theoretically, you can develop a gross target for Cascade Natural Gas and true it up for your planning and reporting, and come out with less. In gross, you can achieve a target but on paper it would appear you missed it.

Fred Gordon: We agree to the adjustments in advance with the utility. The numbers can translate.

Al Spector: Do you see a savings gain through spillover, or more of a market loss through free ridership?

Fred Gordon: We estimate spillover at about 1 percent. It's very small. Spillover is far less reliable than free ridership. How much of a bias is there? It's hard to measure.

Lisa McGarity: What does the OPUC require?

Fred Gordon: JP found some reference to net savings in his research with the OPUC in an IRP document from prior to 2002. The OPUC has required net by verbal contract, but no one can find it written down. It's more about IRP rules. We have talked to the OPUC staff about this.

Holly Braun: The Washington Utilities and Transportation Commission has NW Natural report in gross.

Fred said gross savings plus spillover seems to be the best option for the utilities, and that's the staff recommendation. He noted that by the time free ridership gets up to about 60 or 80 percent, Energy Trust is probably no longer supporting the measure. There are likely other indicators along the way.

Becky Robbins: Will you do the evaluation factor and line loss factor?

Fred: This change does not impact our use of realization rates or accounting for line losses.

Fred said he is sharing this with several groups, as shown in the slides. It will take changes in Energy Trust tracking, IT systems, goals and communications. It would be a change by fall 2019 to be ready for the 2020 budget.

CAC members discussed the pros and cons of the potential change, as well as areas where they may need more information.

Holly Braun: We talked about this years ago. The cause and effect isn't just linear—not A causes B. There are tentacles. The contractor designs their business model around it, and the customer does their action based on that and isn't aware of your influence. This makes a ton of sense. This topic would be good in the World Café-style workshop. It's very foundational and there are lots of implications. If you're doing gross and not net, things can still be cost effective in terms of what you offer. It may not lead to furnace incentives coming back, but if you move to

gross, are there other measures that come back into focus? It feels like there's a lot to work on with that.

Fred Gordon: It's true that there are a lot of factors and tentacles in the market. You can pick baselines based on current sales, like we do, or sales from other times, like what is done in Washington. For furnaces, we looked at the sales patterns and determined if we needed to be there, and the answer is yes in lagging markets.

Holly Braun: Will we have a chance to do a workshop on this?

Kari Greer: Pacific Power just had our bi-monthly meeting with Energy Trust, was that the engagement with us, or will there be more?

Fred Gordon: There will be more engagement.

Wendy Gerlitz: This won't change total resource cost test calculations but will it change utility calculations. How will they change?

Fred Gordon: We haven't looked at it measure by measure. This change won't impact individual measure cost effectiveness. We net out free riders at the program and utility level. That 13 percent savings improvement bounced around over the years. They are aggregated to be more meaningful.

Lisa McGarity: The gross method gives you a better overview of what's being contributed to the system. The programs are for the least-cost resource being purchased. Exiting a market is really complex.

Al Spector: Gross may be the right direction. The magic may be in baseline setting and incremental savings. For Cascade Natural Gas' Washington process, we look at new measure versus turnover or replacement. It's probably similar for Energy Trust. We can kind of look at the incremental when we're trying to build out therm savings. It takes some of the voodoo away from it. It would be helpful to have more of a workshop. I'm optimistic about this.

Dave Moody: This makes a world of sense to me. It's difficult to measure.

Holly Braun: We can't just answer it sitting around a table like this. We did net for a reason. It would be good to explore it before going to the board or OPUC.

Al Spector: In the documentation you put together, the organization intended to go beyond the savings going on at the time. Are there other ways to demonstrate that value add without taking the net approach?

Dave Moody: It doesn't sound like you're moving away from the base case now. The delta seems to be what's efficient versus market average. You don't care if it's free ridership. It's the system impact.

Al Spector: I agree, and that's what the language seemed to point to. You can capture that intent without using the net approach.

Al Spector: Is this the price at which we can achieve a certain amount of savings?

Fred Gordon: That's part of our work with the OPUC. We have to do more to get there.

Jason Klotz: Preliminarily, PGE was the holdout on moving to gross, but we need to see some details about when and how.

Fred Gordon: This isn't for today, but one big question is how do we move forward? That's a question for our program staff. We can give market research. We can give an unbiased version of, "Can you do this without us?"

Lisa McGarity: The whole reason free ridership is looked at is cost effectiveness. You can't count the savings, but you still have the costs. The commission has to look at where those numbers stand.

Kari Greer: I think we should speak with our internal team to discuss it. It would be good to flesh out what we think is in rule.

Hannah Cruz: It sounds like there are still questions about a better understanding of the objectives and intent behind originally using net and whether those objectives, if still needed, will be met through a change to gross. In addition, you are asking about when and how programs would know to exit a market in a gross world.

Al Spector: Since you merged comments as mine and Holly's. I think we would be favorable to this if we work out the odds and ends. I support moving to gross, but if we find we agree with the original intent of net we need to understand how we clarify the differences for regulators. I'm initially in favor.

Holly Braun: NW Natural just had our semi-monthly meeting and this didn't come up. As we're just discussing the role of CAC, this does seem like the type of thing we can flesh out if it's needed and helpful.

Fred Gordon: Is this a whether question or a how question? If it's what is the meaning of X, it's broader than a how-question.

Holly Braun: I'm thinking it's in the how. If you're calculating the cost effectiveness of something versus claiming savings, you can run through a white board exercise to see the implications of the change. That would be helpful.

Hannah noted she will take the remaining questions internally to staff to understand what further engagement could be had at CAC.

7. Public Comment

There were no public comments.

8. Meeting Adjournment

The meeting adjourned at 4:40 p.m. The next Conservation Advisory Council meeting will be held on Wednesday, August 1, 2018.

Tab 8

Renewable Energy Advisory Council Meeting Notes

Wednesday, June 20, 2018

Attending from the council

Erik Anderson, Pacific Power
Bruce Barney, PGE
Meghan Craig, OSEIA
Alexia Kelly, Electric Capital Management
Dugan Mariel, SunPower (for Suzanne Leta)

Patty Satkowicz, Pacific Power
James Valdez, Spark Northwest
Frank Vignola, University of Oregon
Seth Wiggins, Oregon Public Utility Commission (for JP Batmale)

Attending from Energy Trust

Mike Colgrove
Hannah Cruz
Andy Eiden
Emily Findley
Matt Getchell
Jeni Hall
Betsy Kauffman
Dave McClelland
Debbie Menashe

Dave Moldal
Joshua Reed
Lizzie Rubado
Zach Sippel
Rachel Wilson
Robert Wylie
Lily Xu

Others attending

Dan Bihn, Bihn Communications
Kelcey Brown, Pacific Power
Thomas Farringer, EC Company
Ernesto Fonseca, Energy Trust board member
Teyent Gossa, PGE

Executive Summary:

- Solar update:
 - Dave McClelland presented a status update on installation and incentive processing from the applications received in 2017 during the state Residential Energy Tax Credit closeout and Energy Trust incentive update in 2018.
- Update on Energy Trust's strategic planning process:
 - Hannah Cruz and Debbie Menashe presented an update on the timeline, process and plans for engaging RAC in the development of Energy Trust's 2020-2024 Strategic Plan.
- What we can learn from Japan about resilient power systems:
 - Dan Bihn presented on what the Pacific Northwest can learn from Japan's earthquake and recovery to make our electrical infrastructure more resilient.
- Energy Imbalance Market (EIM) overview:
 - Kelcey Brown from Pacific Power and Teyent Gossa from Portland General Electric presented information on their participation in the Western EIM and the implications for energy markets in the near future.

1. Welcome, introductions, announcements

Dave Moldal called the meeting to order at 9:32 a.m. The agenda, notes and presentation materials area available on Energy Trust's website at: <https://www.energytrust.org/about/public-meetings/renewable-energy-advisory-council-meetings/>

2. Solar update

Dave McClelland presented a status update on installations and incentive processing from the applications received in 2017 during the state Residential Energy Tax Credit (RETC) closeout and Energy Trust incentive uptake in 2018.

Dave reviewed the status of the RETC close-out applications, stating 80 to 90 percent of projects made the deadline. There are 144 projects that missed the deadline, which Energy Trust is following up with.

Bruce Barney: Can you confirm the 144 projects are active on your side, but not active with RETC anymore?

Dave McClelland: That's right. Some we paid in previous years, so there are projects we paid last year but did not close out their RETC. We aren't sure what happened with those. Others we paid earlier this year. If we receive the RETC withdrawal notification we let them move forward at the current incentive rate, which is higher. We also still have about 450 projects that made the RETC cut that we still need to verify, and we will continue to close those out.

Dave continued by describing recovery of residential solar activity. He presented a chart of solar volume by month, showing volume is up to 80 percent of 2017, which has implications for Energy Trust's 2018 budget.

Dave McClelland: Does anyone from the solar industry want to comment?

Thomas Farringer: I can't speak for residential, unfortunately.

Dave continued with the 2018 outlook, expected volume and non-residential volume.

Thomas Farringer: Do you track 1.5 percent solar status on any of these?

Dave McClelland: Good question. We do, but I can't tell you offhand.

Jeni Hall: We don't have the data split that way. We do work with 1.5 percent projects, and they often go for the grant. It's safe to say there are a few in there.

Thomas Farringer: I know on the residential side you track if it's a third-party owned project. Is there a reason for not collecting 1.5 percent data?

Dave McClelland: The Oregon Department of Energy has a report to track 1.5 percent projects, which we could compare to our data. It hasn't been a priority, but we can definitely do that.

Dave continued with the pathway for Energy Trust and utility grants. PGE's Renewable Development Fund (RDF) and Pacific Power's Blue Sky grants are now eligible for Solar Development Assistance (SDA) incentives to support more robust design work upfront, leading to better grant applications. The projects are also eligible for installation incentives at 75 percent of the currently-available standard rates.

Erik Anderson: Is there any different treatment for incentive reservation?

Dave McClelland: The reason for providing 75 percent of the standard incentive is that it's reserving next year's incentive. We're letting them come in the door for next year's incentive pool now. That is a long time to hold those funds, but the tradeoff is that it's a lower incentive. If

a large number of projects come back and cancel, we may have to re-evaluate the offer, but the hope is that they are higher quality projects and most will move forward.

Dugan Mariel: Who can apply for solar development assistance?

Dave McClelland: Nonprofit entities as well as for-profit entities. For-profits need to get a special allowance from the OPUC. Is that correct?

Erik Anderson: Yes, we have to get OPUC approval, but this hasn't happened yet.

Frank Vignola: What percentage of projects that apply for grants are selected?

Erik Anderson: It varies every year by the application pool, the price of Renewable Energy Certificates (RECs) and what money is left over. It's quite a bit of money, but there are many projects that don't get accepted. Do you have any real numbers on RDF?

Bruce Barney: No.

Frank Vignola: What's the percentage?

Erik Anderson: It's about 70 percent.

Bruce Barney: It's more than 50 percent at PGE.

Dave McClelland: We bring very intensive design review to these projects as well as on-site verification. We are happy to partner with the utilities.

Betsy Kauffman: It's also worth noting that these projects don't qualify for federal investment tax credits.

Dave McClelland: One metric of success is that last year, they only received 12 applications, and this year received more than 20.

Dave continued with progress on 2018 priorities, including a recent upgrade to a new version of PowerClerk software for the program's online incentive application processing.

Bruce Barney: This is of interest. We are very close to signing on with PowerClerk.

Dave McClelland: That's the dream, to have net metering and incentive application processes fully integrated.

Dave McClelland concluded the presentation with 2018 priorities, including a new area of focus on low and moderate income strategies and higher-value solar installations that incorporate controls and storage.

Dave Moldal made an announcement about transitions in the council, stating that board member John Reynolds has retired from RAC and the board of directors. He introduced Ernesto Fonseca, a new Energy Trust board member, to the group and gave a brief overview of his background. Ernesto spoke further about his background as an architect practicing green building design, explaining that a desire to be out in the community changed his focus to applying energy efficiency to affordable housing. He described an example of the challenges of cooling costs in Arizona, stating families may pay \$300-400 month in energy bills. A study showed that families were using strategies like unplugging all their appliances when they went to work and only using a swamp cooler at night to combat energy costs, compromising thermal comfort to save money. Ernesto emphasized there are a number of factors to make houses affordable beyond efficiency, and he aims to help achieve this through technology.

3. Update on Energy Trust's strategic planning process

Energy Trust has begun work on its next five-year strategic plan. The strategic planning process will involve input from the Renewable Energy Advisory Council and Conservation Advisory Council over the next year. Hannah Cruz and Debbie Menashe presented a brief update on progress to the current 2015-2019 Strategic Plan, provided highlights on the strategic planning discussions that took place at the board of director's annual strategic

planning workshop in May and provided a high-level draft of the upcoming strategic planning development process. All materials related to the current plan and development of the upcoming plan are available online at www.energytrust.org/strategicplan.

Frank Vignola: Energy Trust has a recognizable name around the state, even in Eugene.
Debbie: That was a lot of the message from the OPUC at the May workshop.

Debbie explained the role of RAC and CAC in helping board members and staff develop the 2020-2024 Strategic Plan and the schedule for engagement starting in August.

4. What we can learn from resilient power systems

Before the presentation began, Dave introduced Alexia Kelley, a new RAC member from Electric Capital Management who had recently joined the meeting.

Dan Bihn presented on what the Pacific Northwest can learn from Japan's earthquake and recovery to make electrical infrastructure more resilient. The presentation covered background on Japan's energy usage prior to the disaster, the effects of the earthquake and tsunami and recovery efforts in the aftermath, which lead to many innovations and new practices. He also discussed how lessons learned can be applied to Oregon's resiliency planning, especially grid modernization and the ability to access California renewables.

Ernesto Fonseca: I want to hear your thoughts on how you compare this disaster to Puerto Rico. Compared with fairly quick recovery in Japan, six months later there are still blackouts and shortages there. Mexican and American companies have been over there assisting, but they are still not able to get everything back online.

Dan Binh: After the earthquake, tsunami and meltdowns of 2011, Japan faced a year-long electric power shortage. Their only choice was to ration power, initially through rolling-blackouts and then by months of disruptive, enforced conservation. Since then, Japan has enthusiastically moved to more tightly integrate supply and demand in near-real-time, creating a grid that is more resilient, more renewable and more efficient. In Puerto Rico, it was a problem when the load doesn't know there is a supply issue. There are electric loads running that don't need to be on, and that contributes to overloading the grid.

Bruce Barney: I was recently at a conference where they discussed electric school buses, and the two things that everyone asked for were the ability to drive up and plug in USB cords to the vehicle and the ability to drive up to power a traffic signal during a grid outage.

Dan Binh: I hadn't thought of that as a use for EVs.

Betsy Kauffman: In Japan, since it was a peak problem rather than overall use problem, was anything done to educate citizens about the difference between peak and overall usage? The idea would be to avoid having people turning off their air conditioning at night when it didn't have an impact on the problem.

Dan Binh: They didn't. The story was not told to the people at all. The communications people didn't understand that the problem was about peak, rather than total usage or capacity.

Lizzie Rubado: If they had an economic signal, everything would have been easier. Back when people paid for long distance, everyone knew about evening and weekend pricing. It was expected that only critical business would be done during the day.

Dan Binh: Japan deregulated the retail relationship to allow utilities to providing pricing signals to customers. Before, they weren't communicating the value of behavior changes to the consumer.

Andy Eiden: In the northwest, what are the differences and challenges to getting smart infrastructure in place?

Dan Binh: Motivation is the challenge. When you see 20,000 people die, you're open to a lot of new ideas, but what is the wakeup call for us and who's going to pay for it? We need to start using cheap California renewables. There is an opportunity to get what we need from buying California power, but there are institutional barriers. We could wait for a big disaster, but California's throwing away solar and it could be an opportunity for us. We need flexibility to use renewables in order to be resilient in those scenarios.

5. Energy Imbalance Market overview

Kelcey Brown from Pacific Power and Teyent Gossa from Portland General Electric presented information on their participation in the Western EIM and the implications for energy markets in the near future.

Kelcey and Teyent provided background on their utilities' experiences with EIM. Kelcey played a video showing an imbalance market overview for Pacific Power and stated that the main goals of this strategy are cost-effectiveness and providing the best rates for customers. EIM uses regional diversity as a way to address intermittency and align balancing areas, which previously operated independently. Pacific Power has seen \$135 million in benefits through the expansion of the Energy Imbalance Market. PGE has seen \$2.3 million in benefits. However, PGE has a much smaller territory and a limited amount of transmission compared to Pacific Power. EIM provides fuel savings for the utility, since it takes pressure off systems to ramp up or down in the case of events such as "micro-bursts" of wind energy.

Frank Vignola: Is most of what you're backing off gas? If you have a fast, big ramp, is that mostly gas or can you address it with coal?

Kelcey Brown: We have a 45 MW ramp rate, and we can move our coal plants 125 MW every five minutes. Gas plants have 25 MW ramp rate per minute. Hydro has 40 MW per minute ramp rate.

Teyent Gossa: You have to look at capability as well.

Dan Binh: You talk about down-ramping. The other side is up-ramping your load.

Kelcey Brown: Do you mean demand response?

Dan Binh: Yes.

Kelcey Brown: The greatest benefit we receive is in the spring. We earn very little in the summer due to our capacity need and additional generation over the peak. In spring, solar and hydro are very high. This system is the most valuable because we have a massive amount of coal plants and they're the best at ramping down. We can schedule our resources to follow that ramp more effectively than a wind resource. Coal plants have very low minimums for operating.

Kelcey continued discussing the responsiveness of coal and increased flexibility provided by the ability to operate coal plants at minimum, down to 5 percent of peak output. In comparison, gas plants lack flexibility because they don't have a large moveable range (they can only be ramped down to 50 percent of peak). Utilities have to nominate gas from the pipeline a day ahead, which still needs to be used even if demand is lower than expected.

Fred Gordon: Are there efficiency penalties for operating that low? Like fuel efficiency?

Kelcey Brown: You are at a less efficient heat rate. You are also only operating at 10 MW versus 200 MW at peak, so the inefficiency is relatively small comparatively.

Teyent Gossa: In the old days, we focused on efficiency, but now that efficiency value is much cheaper compared to the benefit you're getting from EIM.

Dan Binh: Are there emission implications on that ramping?

Kelcey Brown: We've had dramatic emissions reductions. We have capacity requirements, and everything is governed by regulations. Operators have had to work through some issues, but they can tune their boilers to stay in standards and achieve our ramping requests. Now, we move the unit output up and down much more. Another benefit has been the reduction of coal slag accumulations. Slag is particulate matter in the boiler that's not expendable and accumulates on tubes, causing leaks. The coal boilers are hung from girders and don't attach to the floor to allow for thermal expansion. The rigid steel poles accumulate slag as coal is fed into the boiler. Because we are moving the output of the unit up and down, it's expanding and contracting more and we no longer have slag buildup. We have not seen increased maintenance issues, but we're still looking at it. Overall, the plant operators are excited by the challenge.

Lizzie Rubado: It seems like you sustained enormous savings. You're utilizing more renewables and generating less emissions, and it's making money. So, does that mean more is better? Is there more capacity to increase savings and decrease carbon by bringing on more renewables?

Teyent Gossa: Even before we joined EIM in the spring, we shut down the majority of plants. For PGE, we can't say something similar because sometimes we have a large capacity of hydropower we don't fill up, so we import through Pacific Power. We started pushing our water operation to the evenings, which helps us manage fish passage requirements. We are trading between renewable and renewable.

Lizzie Rubado: PGE and PAC are sending a market signal that renewables are preferred and profitable, yet continue to lower QF prices. This seems incompatible. The low QF rates seem to send a "don't build" renewables signal.

Betsy Kauffman: You are saving money.

Kelcey Brown: It's not a don't-build signal, but it is interrelated. For example, using coal costs at \$14 per MWh. As you build more renewables, the utility should only pay the fuel costs you're avoiding. Our customers shouldn't have to pay more than \$14 per MWh. Otherwise, why build it? Why should they pay more than what they can get today?

Betsy Kauffman: It's saving you \$135 million.

Kelcey Brown: That savings is built into our avoided cost rates.

Fred Gordon: You are deferring capacity.

Kelcey Brown: In terms of power prices, it's always dependent on the marginal unit. If this is the cheapest unit, prices would be \$14 per MWh. Every resource that produced energy would be paid that for the additional energy it provided. That's why power prices have come down so much. New renewables are offsetting cheaper thermal resources. We were able to decommission the expensive gas plant. Now, as you have cheaper and cheaper resources you're avoiding, the next megawatt to produce is cheap, so the avoided cost is lower. Your cost is determined by the next marginal unit. You have to beat out some of our cheaper units for customers not to be impacted or pay more than they would normally.

Kelcey Brown: When you get up to peak, you're in the gas plant.

Andy Eiden: I think that the PJM market offers the highest market clearing price to the remainder of the resources in the auction. So for example, a coal plant bids in at the highest prices and then wind is cheaper but still gets the higher price. Is that a difference between these two markets? How does that fit?

Kelcey Brown: EIM is a day ahead market, whereas PJM has two markets. They have a market set up on a day-ahead basis, and they have resource adequacy requirements. Within that footprint, for PJM, they look for peak next year and make sure they have capacity. They developed a capacity market, but every market is different. The California ISO put it at the load-

serving entity level for four utilities. Each of those has to go out and procure for their allotted capacity on a year-ahead basis. The marginal cost is the clearing price. EIM doesn't do day-ahead. It's hour-ahead, and that's why it can be more challenging for utilities that don't have flexibility on their units. When they set up on a day-ahead basis, they are scheduling it to fill in as the load comes up. They can only move gas units down to minimums and can't take them off.

Teyent Gossa: For PGE, as we were seeing a renewables push, we built storage so we didn't have that constraint to manage. There are multiple parts to coordinate.

Frank Vignola: How important is forecasting for wind and solar?

Kelcey Brown: It's extremely important for us, and also for California. For them, it's important because it's over half of supply in certain times.

The presentation continued with a discussion of battery storage.

Seth Wiggins: Is EIM constrained by transmission?

Kelcey Brown: It uses available transmission. Pacific Power has the most connections, and we are interconnected with everyone on Pacific Power west. We can import up to 2800 MW total between Pacific Power west and east. This ability isn't necessarily solely tied to transmission. In the summer, Pacific Power west operates on schedules, not flow. Pacific Power west could schedule 600 MW, but when power is cheap, they can flow it backwards into Pacific Power east. Instead of sending 600MW, they can keep that and take the other 600. We can use the transmission capacity, but also the schedules. If California didn't forecast well, but if we hit transmission capacity, Pacific Power gets to send 0.

Seth Wiggins: Have capacities been hit so far?

Kelcey Brown: We hit them every day. We do hit transmission constraints quite a bit, and we'd love to take more of California's power. There are also diminishing returns. It's becoming more challenging, so demand response is going to become more important. For example, the Cool Keeper program can provide 250 MW by cycling off customers' air-conditioning units for 15 minutes each hour over four hours. We are also using that for frequency response. If there's a frequency event, we will cycle our air-conditioning load.

6. Public comment

There was no public comment.

7. Adjourn

The meeting adjourned at 12:11 p.m. The next scheduled meeting of the Renewable Energy Advisory Council will be Wednesday, August 1, 2018.

Tab 9

Energy Trust of Oregon Glossary of Key Terms and Program Descriptions

Key terms

Updated May 2018

Allied technical assistance contractors: Allied technical assistance contractors provide technical analysis and studies to help industrial customers identify energy-efficiency upgrades.

Avoided cost: The amount of money that an electric utility would spend for the next increment of electric generation it would need to either produce or purchase if not for the reduction in demand due to energy-efficiency savings or the energy that a co-generator or small-power producer provides. Federal law establishes broad guidelines for determining how much a qualifying facility gets paid for power sold to the utility.

Benefit/cost ratio: Energy Trust ensures investment in cost-effective energy efficiency based on the Total Resource Cost Test benefit/cost ratio and the Utility Cost Test benefit/cost ratio. Together, the tests assess the value of the energy-efficiency investment compared to a utility supplying the same amount of energy, and determine whether energy efficiency is the best energy buy for a utility and for all utility customers.

Total Resource Cost Test: This is the main test that determines whether Energy Trust can offer an incentive for a project. Benefits include the value of energy savings to the ratepayers of the utility system over the expected life of the energy-efficiency resource (otherwise known as the avoided cost of energy), and in some cases benefits also include quantifiable non-energy benefits, such as water savings and operations and maintenance benefits. Costs include the total cost of the energy-efficiency resource, including Energy Trust incentives and the project cost paid by the participating customer

Utility Cost Test: This test is used to indicate the incentive amount for a project. It helps Energy Trust determine whether providing an incentive is cost effective for the utility system. Benefits include the value of energy savings to the ratepayers of the utility system over the expected life of the energy-efficiency resource (otherwise known as the avoided cost of energy). Costs include the cost of the Energy Trust incentive.

Cost-effectiveness: The OPUC has a definition that refers to ORS 469.631 (4) stating that an energy resource, facility or conservation measure during its life cycle results in delivered power costs to the ultimate consumer no greater than the comparable incremental cost of the least-cost alternative new

energy resource, facility or conservation measure. Cost comparison under this definition shall include but not be limited to: (a) cost escalations and future availability of fuels; (b) waste disposal and decommissioning cost; (c) transmission and distribution costs; (d) geographic, climatic and other differences in the state; and (e) environmental impact. ORS 757.612 (4) (SB 1149) exempts utilities from the requirements of ORS 469.631 to 469.645 when the public purpose charge is implemented.

By law, Oregon public purpose funds may be invested only in cost-effective energy-efficiency measures—that is, efficiency measures must cost less than acquiring the energy from conventional sources, unless exempted by the OPUC.

Demand response: A load management strategy, it is the reduction in electricity consumption by end-use customers from their normal pattern of consumption during times of peak energy use, when wholesale electricity prices are high and/or when system reliability is jeopardized. Customers are often compensated for participating in demand response programs.

Energy Saver Kit: Customers of PGE, Pacific Power, NW Natural, Cascade Natural Gas and Avista can order free Energy Saver Kits from Energy Trust's website, including energy-saving LEDs, showerheads and faucet aerators.

EPS™: Builders can receive cash incentives for new homes constructed to EPS energy performance requirements, indicating low energy consumption, utility costs and carbon footprint. The score helps homebuyers assess and compare the energy use and costs of similarly sized homes.

Irrigation modernization: A collaborative effort by Energy Trust and Farmers Conservation Alliance, irrigation modernization connects irrigation districts and farmers with tools to invest in modern irrigation infrastructure, saving water and energy, improving habitats for fish and generating clean energy through small-scale hydropower systems installed in pipes.

Levelized cost: The level of payment necessary each year to recover the total investment and interest payments (at a specified interest rate) over the life of a measure.

Market Solutions: Tailored market solutions incentive packages help businesses make quick decisions and achieve deeper energy savings when constructing small restaurant, grocery, multifamily, office, school or retail buildings less than 70,000 square feet.

Market transformation: Lasting structural or behavioral change in the marketplace and/or changes to energy codes and equipment standards that increases the adoption of energy-efficient technologies and practices.

Megaproject: Large commercial or industrial projects receiving more than \$500,000 in incentives for energy-efficiency upgrades are considered megaprojects. These projects are reviewed and approved by Energy Trust's Board of Directors.

Midstream incentive: Midstream incentives are provided to distributors and retailers to encourage stocking of energy-efficient equipment, and are passed on to both consumers and contractors as instant discounts, reducing barriers to participation.

Multnomah County Property Fit initiative (formerly Commercial Property Assessed Clean Energy): Started in 2015, the pilot provides 100 percent of funding to commercial property owners that complete comprehensive energy-efficiency and renewable energy projects, with standard incentives from Energy Trust and long-term loans from the Portland Development Commission repaid through energy savings or electricity production.

Path to Net Zero: The Path to Net Zero offering provides increased design, technical assistance, construction, and measurement and reporting incentives to new commercial construction projects that aim to exceed energy code by 40 percent through a combination of energy-efficiency and renewable energy features.

Pay for Performance: The Pay for Performance offering for commercial customers offers incentives for capital and operations and maintenance improvements over a multiyear period to help achieve additional energy savings for more comprehensive projects.

Program Management Contractor (PMC): Company contracted with to deliver and implement a program or major program track. PMCs keeps costs low for utility customers, draw from existing expertise and skills in the market, and allow Energy Trust to remain flexible and nimble as the market changes. PMC contracts are competitively selected, reviewed by a committee with internal staff and external representatives, and approved by the board. Contracts are rebid on a regular basis.

Program Delivery Contractor (PDC): Company contracted with to implement a specific program track. PDCs keeps costs low for utility customers, draw from existing expertise and skills in the market, and allow Energy Trust to remain flexible and nimble as the market changes. PDC contracts are competitively selected, reviewed by a committee with internal staff and external representatives, and approved by the board. Contracts are rebid on a regular basis.

Project development assistance: Incentives and support for early-stage development of Other Renewables projects, project development assistance helps build a pipeline of future renewable energy projects.

Retrocommissioning: A systematic process for identifying less-than-optimal performance in commercial equipment, lighting and control systems and improving the energy efficiency of these existing systems.

Savings Within Reach: Owners of single-family or manufactured homes who meet moderate-income qualifications can receive enhanced Savings Within Reach incentives for qualifying projects.

Strategic Energy Management: Energy Trust helps industrial and commercial customers reduce energy use and save money through behavioral and low-cost operations and maintenance improvements.

Targeted load management: This term encompasses efforts to change how and when energy is used. It could include efforts from the customer perspective to reduce non-coincident peak, efforts from the utility perspective to reduce coincident peak demand, and/or efficiency programs to reduce energy consumption. Formerly referred to as locational load management or targeted demand-side management.

Verifier: Trade ally verifiers provide technical guidance and inspection to home builders, ensuring that homes rated with EPS save energy through energy-efficient windows, HVAC, appliances and weatherization.

Program descriptions

Existing Buildings: The Existing Buildings program offers energy-efficient improvements for existing commercial buildings of all sizes. Incentives are available for custom projects, including capital upgrades and operations and maintenance improvements; standard upgrades; lighting upgrades; and energy management offerings such as commercial Strategic Energy Management, with incentives, tools, training, and technical assistance to help customers reduce energy use through behavioral and operations improvement.

Existing Multifamily: The Existing Multifamily program serves buildings with two or more dwelling units across diverse market segments, including market rate housing, affordable housing, assisted living facilities, campus housing facilities, homeowners associations and individual unit owners. Offerings include free installation of LEDs, showerheads and faucet aerators, and distribution of energy-saving advanced power strips in tenant units. Other offerings are incentives for common-area lighting upgrades; incentives for standard offerings including HVAC equipment, water heaters, weatherization, appliances and foodservice equipment; midstream incentives provided to distributors for qualifying equipment and lighting measures; incentives for custom projects; and technical services including technical analysis studies and free walkthrough surveys.

New Buildings: New Buildings influences commercial design and construction practices to reduce energy use. Program staff work closely with building owners and design teams to make energy considerations part of building design criteria and an asset for the building owner in major renovations and new construction projects. Outreach managers influence a broad range of market actors, leveraging energy-efficiency and renewable energy strategies and incentives to achieve energy-savings targets. New Buildings delivers highly technical solutions, simplified where possible, to create cost-effective, above-code options that leverage architectural design solutions and systems. New Buildings provides incentives to support high-performance design, including early design assistance, energy modeling incentives and a solar-ready offering. Incentives for whole-building approaches include modeled savings and standard incentive packages for small commercial buildings. Prescriptive and calculated incentives include standard offerings and lighting calculators.

Production Efficiency: Production Efficiency provides energy-efficiency solutions for all sizes and types of eligible industrial, agricultural and municipal water and wastewater customers. The program provides services and incentives through three primary delivery tracks: standard, custom and energy performance management.

Residential: Energy Trust's residential program provides electric and gas energy-efficiency solutions for residential customers of single-family homes, manufactured homes and newly constructed homes. Cash-back incentives are available for energy-efficient HVAC systems, appliances and weatherization upgrades. Instant discounts are provided for water heating equipment, lighting and showerheads. The

program delivers services through program tracks: home retrofit, manufactured homes, retail promotions and new construction.

Solar: The Solar program aims to create a vigorous and sustainable market for solar in Oregon by offering cash incentives that lower above-market costs for small residential and commercial solar projects, educating consumers, creating and enforcing quality standards and ensuring a robust network of qualified trade ally contractors. Staff review and adjust incentive levels regularly to manage budget and respond to changes in solar costs. The Solar program supports installation of distributed solar systems across all customer sectors and types.

Other Renewables: The Other Renewables program supports renewable energy projects up to 20 megawatts in nameplate capacity that generate electricity using biopower, geothermal, hydropower and municipal-scale, community-owned wind technologies. Most projects are less than 2 megawatts in size. The goal of the program is to expand Energy Trust's renewable energy portfolio across a range of technologies and improve market conditions for renewable energy projects. The program provides project development assistance incentives and installation incentives. Project development assistance incentives can pay for a portion of the costs of feasibility studies, technical assistance or other non-capital cost assessments and investigations to help projects move from concept to construction. Qualified projects may access project development assistance incentives multiple times, up to the limits of funding caps, enabling applicants to move through consecutive development activities. The program also provides installation incentives calculated on a custom basis after a detailed technical and financial review of a project's application. All incentives are paid following successful project installation or activity completion.

Northwest Energy Efficiency Alliance: To deliver low-cost energy for customers, Energy Trust has been working with the Northwest Energy Efficiency Alliance (NEEA) since 2002 to increase the availability and adoption of energy-efficient electric products, equipment and practices. In 2015, natural gas equipment was added. By pooling resources at a regional level to work with manufacturers, distributors and retailers, NEEA accelerates the development, testing and distribution of new energy-saving equipment and approaches. NEEA identifies and refines new high-efficiency products, services and practices and helps bring them to market. NEEA is supported by and works in partnership with Bonneville Power Administration, Energy Trust and more than 100 Northwest utilities for the benefit of more than 12 million energy consumers.