Energy Trust Board of Directors Meeting

June 8, 2016

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143rd Board Meeting

Wednesday, June 8, 2016
421 SW Oak Street, Suite 300
Portland, Oregon

Agenda

		Tab	Purpose
11:45 am	**Executive Session** *The board will meet in Executive Session pursuant to bylaws section 3.19.1 to discuss internal personnel matters.* ***The Executive Session is not open to the public.***		
12:30 pm	**143rd Board Meeting—Call to Order** (Debbie Kitchin) • Approve agenda		
	General Public Comment *The president may defer specific public comment to the appropriate agenda topic.*		
	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.* • April 6 Board meeting minutes	**1**	Action
12:35 pm	**President's Report** (Debbie Kitchin)		
1:00 pm	**Energy Programs** (Thad Roth)		
	• CLEAResult Contract Extension as Existing Homes Program Management Contractor	**2**	Info
	• CLEAResult Contract Extension as New Homes Program Management Contractor	**2**	Info
	• Ecova Contract Extension as Products Program Management Contractor	**2**	Info
	• Program Management and Program Delivery Contract Terms		Info
1:50 pm	**Break**		
2:00 pm	**Committee Reports**		
	• Executive Director Review Committee (Melissa Cribbins)		Info
	• Evaluation Committee (Alan Meyer)	**3**	Info
	• Strategic Planning Committee (MarkKendall)	**4**	
	• Finance Committee (Dan nloe)	**5**	Info
	• Policy Committee (Roger Hamilton)	**6**	Info
2:45 pm	**Break**		
3:00 pm	**Staff Report**		
	• Highlights (Margie Harris)		
	• Feature Presentation: Energy Trust of Oregon Communications (Hannah Cruz and Jay Ward)		Info
	• Feature Presentation: Energy Trust of Oregon Information Technology (Scott Clark)		Info
4:00 pm	**Adjourn**		

The next meeting of the Energy Trust Board of Directors will be held
Wednesday, July 20, 2016 at 12:15pm
at Energy Trust of Oregon, 421 SW Oak Street, Suite 300, Portland

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Tab 1

Board Meeting Minutes—142nd Meeting

April 6, 2016

Board members present: Susan Brodahl, Ken Canon, Melisa Cribbins, Heather Beusse Eberhardt, Dan Enloe, Roger Hamilton, Lindsey Hardy, Mark Kendall, Debbie Kitchin, Alan Meyer, John Reynolds, Anne Root, Eddie Sherman, Stephen Bloom (OPUC ex officio)

Board members absent: Warren Cook (Oregon Department of Energy special advisor)

Staff attending: Margie Harris, Debbie Menashe, Steve Lacey, Peter West, Pati Presnail, Hannah Cruz, Jed Jorgensen, Betsy Kauffman, Jessica Iplikci, Mike Bailey, Sue Fletcher, Dave McClelland, Elizabeth Fox, Cheryle Easton, Cheryl Gibson, Alison Ebbott, Justin Buttles, Juliet Eck, Mariet Steenkamp, Rachanney Ros, Greg Stokes, Kim Crossman, Ted Light, Jay Ward, Marshall Johnson, Rob Strange, Chris Dearth

Others attending: Elaine Prause (Oregon Public Utility Commission), JP Batmale (Oregon Public Utility Commission), Murali Varahasamy (Lockheed Martin Energy), Claire Carlson (Lockheed Martin Energy), Bob Stull (CLEAResult), BJ Moghadam (NEEA), Scott Scheuneman (RHT Energy), Jeff Manternach (Red Rock Biofuels), Ross Finney (RHT Energy), Brendan McCarthy (PGE), Dave Backen (Evergreen Consulting), Jennifer Price (Moss Adams), Ashley Osten (Moss Adams)

Business Meeting

Debbie Kitchin called the meeting to order at 12:15 p.m. Reminder that consent agenda items can be changed to regular agenda items at any time.

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.

MOTION: Approve consent agenda

Consent agenda includes:

1. February 24 board meeting minutes
2. Corporate Authorization (bank signing authority)—R770

RESOLUTION 770
AUTHORIZING APPROVED BANK SIGNERS

WHEREAS:

1. **Umpqua Bank and Bank of the Cascades provide general banking services to Energy Trust (collectively, the "Banks").**
2. **Section 7.3 of the Energy Trust bylaws requires that the board of directors authorize officers or agents to sign checks, drafts, or other orders for the payment of money, notes and other evidences of indebtedness ("authorized bank signers") by way of resolution from time to time.**
3. **Effective February 17, 2016, Courtney Wilton retired as Chief Financial Officer of Energy Trust.**

4. **Effective March 28, 2016, Mariet Steenkamp became Chief Financial Officer of Energy Trust.**

It is therefore RESOLVED that,

1. **Courtney Wilton is to be removed from the list of authorized bank signers for the Banks.**

2. **Mariet Steenkamp is to be added to the list of authorized bank signers for the Banks.**

3. **The resulting list of authorized bank signers for the Banks is as follows:**

   a. **Debbie Kitchin, Board President**
   b. **Dan Enloe, Board Treasurer**
   c. **Margie Harris, Executive Director**
   d. **Mariet Steenkamp, Chief Financial Officer**
   e. **Peter West, Director of Programs**
   f. **Steve Lacey, Director of Operations**
   g. **Debbie Goldberg Menashe, General Counsel**

4. **The Executive Director is authorized to execute all required documentation to implement this resolution.**

Moved by: Mark Kendall		Seconded by: Roger Hamilton
Vote:	In favor: 13	Abstained: 0
	Opposed: 0	

President's Report

Debbie Kitchin reflected on the many accomplishments of Energy Trust over the years. She noted the board committees are active, engaged and providing good leadership. The organization has a strong board and renowned staff. She encouraged the board and staff to not become complacent, and to keep doing good work. She noted there are changes coming in the next year, like the executive director transition, and when there are strong systems, staff and board members in place, those changes can be made while continuing to make progress.

Committee Reports

Evaluation Committee, Alan Meyer

The LED Streetlights Market Assessment Study reviewed at the last board meeting is in the meeting packet for today's board meeting. The committee met last week and the notes will be in the June board packet.

Executive Director Transition Committee, Ken Canon

The board met in an hour-long executive session this morning to discuss the executive director hiring process. The committee expects good results from the search for a new executive director with a decision anticipated within a couple of months.

Compensation Committee, Dan Enloe

The committee reviewed Energy Trust's investments. Employees can expect more details about the optional socially responsible funds. Generally, performance was as expected on investments. Though there were a few unexpected staff transitions, including retirements and staff leaving Energy Trust, it was

nothing untoward. Related to salaries, the committee approved a comprehensive study of current market salaries for all positions, making adjustments as needed to realign positions and salary ranges to the current market. The salary survey is completed every other year or so, and not annually.

By the end of the year, total compensation costs remained flat, and are expected to increase slightly this year due to changing salaries and health care benefits.

The board commended the Human Resources staff for evaluating and assessing compensation to be both fair and competitive.

Finance Committee, Dan Enloe

Last year, operating costs were essentially flat and delivery costs were reduced. One thing that changed was adding mid-year and year-end incentives Program Management Contractor agreements. The goal was to motivate contractors to acquire savings earlier in the year and to limit the "hockey stick," or the large amount of project activity and incentives delivered at the end of the year. The strategy was somewhat effective and some of the activity did shift into mid-year.

By year-end, program reserves were lowered as planned. Overall, reserves went down from $87 million to $68 million. Pacific Power efficiency reserves went down over $1 million more than budget, and staff will work with the utility this year on fine-tuning on budget and rate planning. A similar trend was noted with Cascade Natural Gas.

The lease extension was executed last month following the board's approval at the February board meeting. The board thanked the committee and the Finance team for pursuing needs and opportunities for the lease extension. In the end, Energy Trust secured a long-term lease renewal that includes favorable terms for space upgrades and keeps the maximum rent below the current and projected market average.

Dan noted the Chief Financial Officer recruitment concluded, and Energy Trust hired Mariet Steenkamp. The board welcomed Mariet. Margie noted Mariet is already invested and interested and has an inquiring mind.

Reviewing the January 2016 financial statement, it was noted total liabilities and net assets are down about $21 million from last year, as planned.

Policy Committee, Roger Hamilton

Today's staff presentations were previewed at the last Policy Committee meeting, including: the Medford Airport solar project, the Production Efficiency megaproject, recruitment updates for the CFO and executive director, and the 2016 Oregon legislative session. The next meeting is May 12.

Strategic Planning Committee, Mark Kendall

The committee is finalizing the agenda and working with staff for the annual strategic planning workshop on May 19 and 20. Packets will be mailed to the board beforehand. There will be presentations on key topics, including a Strategic Plan metrics tool, and an emerging efficiency resources graphic to help the board visualize the role Energy Trust has in rolling out next new technologies and approaches compared to NEEA's role. The information will be helpful for the board as staff utilizes metrics to track progress on Energy Trust's role in emerging technology and resources. The workshop will also include presentations by staff regarding the changing policy environment, including the Clean Power Plan, Oregon's Renewable Portfolio Standard, the federal Investment Tax Credit extension and large customer funding.

The workshop creates time for the board to reflect on Energy Trust's progress to meeting long-term, five-year goals related to energy efficiency, renewable energy, emerging technology and resources,

growing/changing markets and operational efficiencies. The workshop is designed to provide interactive opportunities for the board to work from the material and engage with the presenters.

Mark noted for the board that the term emerging efficiency technology is now being referenced as emerging energy efficiency resources, because it's broader than technology alone.

The board appreciated the timing of the workshop changing from June to May.

Audit Committee

Ken Canon noted the annual financial audit is complete and before the board today for acceptance. Ken introduced Jennifer Price and Ashley Osten of Moss Adams LLP. This is the fourth year Moss Adams has conducted an independent financial audit for Energy Trust. The Audit Committee heard full details on the audit at the last committee meeting in March.

Moss Adams summarized the audit process and results for the board. The audit process included meetings with the Audit Committee to approve the audit scope and completion of all audit procedures by Moss Adams. Jennifer stated the audit followed this standard process and Energy Trust staff was very well prepared. Moss Adams reported Energy Trust received an unmodified opinion on the 2015 financial statements, resulting in Energy Trust meeting its 2015 Oregon Public Utility Commission minimum performance measure to demonstrate financial integrity. This is consistent with prior years. An unmodified opinion means Energy Trust's financial statements are presented fairly in accordance with generally accepted accounting principles (GAAP) in the U.S. Moss Adams reviewed the highlights of the audit and reported there were no items to be communicated specifically to the board.

Moss Adams said the Audit Committee asked them to review Energy Trust's financial procedures and make any best-practice recommendations. Moss Adams described two best-practice recommendations. The first is recommending the executive director expenses be approved by someone on the Audit Committee or the board in addition to the Chief Financial Officer as is currently the case.

The second best-practice recommendation from Moss Adams is related to electronic payments. After meeting with the Executive Director, staff and the Audit Committee, Moss Adams recommends Energy Trust consider outsourcing the option of electronic payments to a bank or third party as they consider expanding the electronic payment system to include incentive payments. The board discussed the electronic payments recommendation. The board noted there are benefits and costs to switching to electronic payments versus paper checks, and there are risks with both. Moss Adams noted willingness to weigh in again once a decision is made and internal controls are set. The board noted to staff that security of the information should be high on the list when exploring electronic payments. While electronic payments can lead to improvements in the speed and accuracy of payments, the board doesn't want to take on a new security risk for those benefits.

The board noted the engagement with Moss Adams was very helpful and instructive. The board recognized the Finance group and its contributions to obtaining an unmodified audit opinion for Energy Trust.

RESOLUTION 771
ACCEPTANCE OF AUDITED FINANCIAL REPORT

BE IT RESOLVED: That Energy Trust of Oregon, Inc., Board of Directors accepts the auditor's report on the financial statements, including an unmodified opinion, submitted by Moss Adams LLP for the calendar year ended December 31, 2015.

Moved by: Anne Root		Seconded by: John Reynolds
Vote:	In favor: 13	Abstained: 0
	Opposed: 0	

The board took a break from 12:55 to 1:10 p.m.

Energy Programs

Margie introduced the resolution. The Production Efficiency program is requesting board approval to waive the program incentive cap and authorize incentives for a Red Rock Biofuels LLC energy-efficiency project in Pacific Power territory. A new liquefied fuels refinery plant will be built in Lakeview, Oregon. Working with Energy Trust, Red Rock proposes to use waste heat from the gasification process to generate electricity, which will all be used on-site to offset electricity purchases from the utility. The system significantly increases the energy efficiency of the overall plant. By offsetting the needs for purchased electricity, the energy-efficiency project is projected to save 48 million kilowatt hours, or 5.5 average megawatts, a year. The incentive proposed would be up to $2 million, paid as savings performance milestones are met. This is a megaproject, and is before the board because the proposed incentive amount exceeds the $500,000 threshold signing authority of the executive director. As a waste-heat-to-power project, it also fits under the board's combined heat and power (CHP) policy.

Kim Crossman introduced Jeff Manternach, chief financial officer of Red Rock, and reviewed the project details. The Production Efficiency program studied and analyzed the project, and quantified the savings, feasibility and cost and benefits. The plant will produce jet and diesel biofuel products, which will be sold to a number of customers. It is a first of its kind plant, converting wood products into synthetic fuels at commercial scale. The greatest energy-efficiency opportunity in the process is during gasification, which produces high temperature, high quality heat. If harnessed, the waste heat can power up to 70-80 percent of the plant's energy needs.

As part of due diligence for the project, the program and Legal group assessed the viability of the business. Red Rock was very open with Energy Trust, and there were no surprises when the program reviewed the Dun and Bradstreet reports. Red Rock was recently acquired by Joule Unlimited Technologies, whose primary investor is Flagship Ventures, Inc. Flagship is focused on investing in the low-carbon economy. Key project milestones have been met or are in process. An independent engineering review of the plant construction and operation plans by Harris Group confirmed the project is on track as expected. At this stage, Red Rock is in the final stages of securing financing.

Kim reviewed how the project is meeting the requirements of the board's policy to waive program incentive caps ("megaprojects"). Incentive agreements for megaprojects must include provisions that bar self-direction of the public purpose charge for at least three years after the final incentive payment. In addition, the project must provide energy-efficiency savings at a lower cost than the standard program. In addition, the policy requires that there be incentive funds available. The proposed project can meet all of these provisions.
The Red Rock waste-heat-to-power project is very cost-effective at an incentive of 4 cents per kWh saved, up to a maximum incentive of $2 million in incentive payments. This will result in savings at about 3/10s of a cent per kWh levelized. Normal Production Efficiency savings for custom projects are about 1 cent per kWh levelized. In addition, there are funds available at Energy Trust, and to further reduce risk, the Red Rock incentive is tied to overall system performance with incentives to be paid in increments and budgeted for in 2018, 2019 and 2020.

Kim reviewed a diagram of the process at the plant, describing where the energy-efficiency project fits into the system. She noted a handful of demonstration plants producing biofuels like Red Rock in the U.S. However, none currently capture the onsite waste process heat to produce power. Kim said that even though the product being made at Red Rocks is innovative, biofuels from forest residuals, the process of gasification is not new and waste-heat-to-power systems, including back-pressure steam turbines and other associated equipment, are common and proven technologies in many types of industries.

The board discussed and assessed the proposal for its risks and benefits, asking a number of questions both with regard to the plant's business and the proposed energy-efficiency project.

The board asked whether natural gas can be used to fuel the entire system. Jeff said natural gas is only used for startup or emergency purposes. It's an alternate and not preferred. The plant's primary feedstock is woody biomass. Jeff highlighted that the waste-heat-to-power process would be operating even if the plant was using natural gas, because the gasification system would still be generating waste process heat.

The board commented the 93 percent utilization rate seemed on the high end of a combined heat and power system. Kim said the utilization rate is consistent with published research and technical studies for back-pressure steam turbines. Steve Lacey noted the 93 percent is the availability of the generator when the plant is operating.

Responding to a question from the board, Jeff described the source of the woody biomass used as feedstock for the primary process, which is predominately slash. Slash is waste material, mainly tops and branches, timber companies leave behind. Current management practice for that material is to collect and burn it on private, state or federal land. The plant will also use pre-commercial thinnings of young trees that are thinned from the forest to encourage growth of fewer, larger trees. Finally, the plant will use sawdust, shavings and bark from the Lakeview Mill. The woody biomass is mainly from Ponderosa pine, Lodgepole pine, White fir and other mixed firs.

Jeff confirmed his supply assessment factored in possible future droughts, noting a report from TSS Consultants. Red Rock has access to three times the amount of materials it needs from private lands and when government land is added, an estimated five times the amount of material needed is available.

Jeff also described direct jobs impacts, noting a Business Oregon economic impact report. There will be 31 direct jobs at the plant and roughly 75 jobs related to biomass harvest, collection and transport.

Kim described how the program is managing possible risk with this energy-efficiency project. The project is following the normal custom process. The program received a detailed technical study by an Allied Technical Assistance Contractor in Quarter 3 2015. The multi-year incentive is paid in increments for verified savings and the program will rely upon detailed monitoring and verification requirements. The program is also providing technical support during design, construction and operation. Much of this work is conducted by RHT Energy, Program Delivery Contractor to the Production Efficiency program. To deliver ratepayer benefits, the milestone requirement ensures incentives are not being held in reserve if for some reason the plant is not built. The Planning group also reviewed the incentive proposal and levelized cost. If the full incentive was paid upfront, the project would have a ratepayer payback of seven months.

The board asked about additional support for the plant and the plant's business plan. The business plan captures an underutilized resource to create a renewable fuel, providing jet fuel to Southwest Airlines and FedEx via long-term contracts and ideally to the U.S. government in the future. There is significant local support for the utilization of woody biomass, and support from the U.S. Departments of Energy and

Agriculture and the Navy, which is funding one-third of the facility construction. Other support for the project comes from the Oregon Department of Energy, Connect Oregon and Business Oregon. The board asked Jeff about various business risks to the plant operations and plan, and Jeff provided detailed responses.

Board members had additional questions regarding the Red Rock business plan. The board discussed how, because this is a new company to Oregon and because this is an early commercial scale biofuel refinery, there is greater risk to the ongoing operations of the project than in Energy Trust incentive-funded projects undertaken by more established companies. The board asked a number of questions of staff and Jeff regarding these circumstances. Staff responded that its business due diligence provides a basis for confidence in the stability of the company. In addition, the short period of ratepayer payback – calculated as a function of avoided cost – and contract terms that provide for incentive payment over time are other ways to manage the company's overall business risk and any risk to the efficiency project.

The board questioned whether this project is a free rider project. Kim said that was the first question staff explored. As they reviewed the project, it became clear the waste-heat-to-power component of the plant, the energy-efficiency project that is being put forth for an incentive, is the only system within the facility that could be cut out of the final design without any impact on the production of low carbon biofuel. All other equipment and systems are required to produce the fuel. It is the only piece that has never been installed in the cellulosic biofuel demonstration plants built elsewhere in the U.S. The staff analysis and review of the independent engineering report indicate the waste-heat-to-power project isn't in the current base plant design. Jeff confirmed the waste-heat-to-power project is not needed to make the biofuel, and so in the event they had trouble raising enough funding for the plant, the waste-heat-to-power system would be the first component value engineered out of their design.

In response to board questions about funding availability, Kim said there are no large customer funding constraints in Pacific Power territory. For many years, Energy Trust has been close to the large customer funding cap in PGE territory, but not in Pacific Power territory. Kim further explained there has not been a megaproject in Pacific Power territory in nine years. The Red Rock project is a viable megaproject that gets Energy Trust large savings at a very low cost. No other projects are or will be turned away. The payback calculation was done in accordance with the Total Resource Cost test, which is how Energy Trust evaluates energy-efficiency investments.

The board discussed the financials of the plant and its investors. Jeff noted Red Rock is now a wholly owned subsidiary of Joule Unlimited Technologies. Joule is funding ongoing operations right now, which will continue into the future.

Jeff clarified the cost of the waste-heat-to-energy project is $8 million and is included in the overall plant cost of $250 million.

The board asked when project financing is expected to be in place. Jeff said there is a detailed timeline on the senior debt and is projecting September for the financial close. The plant is at 30 percent design and engineering. It is shovel ready as soon as financing is set. All other contracts are signed and ready to go. After the financials close, Jeff estimates an 18-month period until plant startup.

The board asked additional questions regarding business risk including those related to consideration of the value of carbon reduction, feedstock supply and costs, plant utility-supplied energy supply, performance bonding and engineering, procurement and construction contract guarantees. Kim and Jeff provided responses.

The board asked what the incentive structure is if the plant does not perform as expected and on schedule. Kim said the program would use the same approach as the last megaproject, and if

performance milestones are not met by the third year, some of the incentive would be forfeited. Kim noted the last combined heat and power project at Oregon State University, which went through the commercial sector, involved a lot of work to dial-in the system over a multi-year period, and that the program technical expertise helped significantly with that effort.

After a motion to approve the resolution to waive the program incentive cap for the Red Rock project, the board amended the resolution to specify that the three-year self-direction prohibition commences at the time the final incentive payment is paid to the project. With the changes made to the resolution, the board voted on Resolution 772.

AMENDED RESOLUTION 772
WAIVING PROGRAM INCENTIVE CAP AND APPROVING INCENTIVES
FOR THE RED ROCK BIOMASS GASIFICATION EFFICIENCY PROJECT

WHEREAS:

1. **The Energy Trust Production Efficiency program has worked with Red Rock Biofuels, LLC (Red Rock) to identify a waste heat to energy system for a new biomass gasification facility located in Lakeview, Oregon (the Project).**

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 nationally-recognized expert.**

3. **The project's energy savings will cost less than half the cost of savings from the average custom project. The incentive for the Project is projected and would be budgeted at $.04/first-year kWh, a levelized cost of < ½ cent / kWh; while Production Efficiency program custom capital projects average $.13/first-year kWh, or about 1 cent levelized.**

4. **Energy Trust funding would be contingent on Red Rock's agreement to suspend self-direction at this site for at least three years after the last payment.**

5. **Energy from the Project will be used on-site.**

6. **Energy Trust funding would be conditioned on committed full debt and equity investment for the project in place not later than November 30, 2016 and would be payable in increments based on 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 after the last payment;**
   - **Incentives to be paid in three annual payments tied to commercial operation and savings performance;**
   - **Post-installation measurement, verification and evaluation plans will be required;**
   - **Red Rock to secure sufficient debt and equity investment by November 30, 2016 to mitigate risk associated with the start-up phase of continued investment solicitations.**

Moved by: John Reynolds
Seconded by: Melissa Cribbins
Vote:
In favor: 12
Abstained: 1; Alan Meyer, due to risk
Opposed: 0

Heather Beusse Eberhardt recused herself at 2:26 p.m.

The Renewable Energy program is requesting board approval for a $1.25 million incentive for a 1.9-megawatt solar system at the Rogue Valley International Medford Airport. The system will essentially result in the airport achieving net-zero energy. The project is a result of a competitive 2015 Request for Proposals for solar projects in Pacific Power territory.

The airport is an active Energy Trust participant where energy-efficient lighting and the major renovation of the control tower were projects in the New Buildings program. The airport has also installed three standard solar projects with Energy Trust.

Dave McClelland reviewed the project details. The system will generate an expected 2,876 MWh a year, slightly more than the annual load. The project is net metered to meet onsite load, and was the only project from the RFP to be net metered. The developer, Lockheed Martin, is working with three possible financial partners. The project cost is $4.71 million, $2.45 per watt, which is at the high end of the RFP and on the low end of the standard commercial solar program. The project cost is not surprising to the program given the location, which requires federal oversight and related conditions.

Dave reviewed milestones met by the project so far and what is still in progress or to be completed. He noted Pacific Power appreciated the project owner engaging them early on the siting. Dave described a new requirement as of last week. The Federal Aviation Administration is asking for an Environmental Assessment, which is a lower-level study than an Environmental Impact Study. The assessment will add some time and cost to the project.

The board asked if other solar projects Energy Trust has supported received environmental assessments. Peter said past Energy Trust-supported projects have had such assessments and mentioned projects in Klamath Falls and Lakeview, Deschutes and Jefferson counties that received USDA grants for on-farm solar systems to support irrigation. Other energy efficiency and renewable energy projects that received grants also went through environmental reviews. In those cases, solar, wind and energy efficiency on site were reviewed in a categorical Environmental Impact Statement. To Peter's knowledge, federal agencies have the authority and are required to complete environmental reviews prior to project approval. For the Medford Airport, a slough runs alongside the property.

Dave described the property and site location. It is industrial zoned property and the system will be outside the runway protection zone. The Environmental Assessment is expected to be completed by Quarter 1, 2017, after which construction will begin. The system is expected to come online in Quarter 3, 2017.

Dave reviewed financial considerations, including revenues and expenses. The board inquired about expenditures, asking for more information on the capitalized construction costs and principal payments line items. Dave and Peter will follow-up with more information, and noted the financial analysis for this project is consistent with past projects.

The board asked why the project owner did not know about the need for an Environmental Assessment. Dave said the property in question was originally purchased as a buffer to the runway. At the time they purchased it, an environmental study was completed which they thought would meet the requirements.

The board said in the future they would like to see the briefing paper note if the developer is seeking to sell the project after construction.

RESOLUTION 773
APPROVE INCENTIVES FOR THE ROGUE VALLEY – MEDFORD AIRPORT SOLAR PROJECT

WHEREAS:

1. **In April 2015, Energy Trust solicited solar projects to be connected to Pacific Power.**
2. **The current proposal involves a collaboration between Jackson County, which owns the Rogue Valley International-Medford Airport, and Lockheed Martin, facilitated by RHT Energy.**
3. **The proposed system will be a fixed-tilt 1,926 kW_{DC} solar array consisting of 5,928 SolarWorld 325 W modules (or an approved equivalent), and 26 Sungrow inverters with a combined AC max power rating of 1,716 kW_{AC}.**
4. **The project would allow the airport to claim to be one of the world's first net-zero airports: current load is about 2,863 MWh/yr. The project would generate an estimated 2,876 MWh/yr.**
5. **The proposed system has capital costs of $4,712,063 or $2.45/$W_{DC}$. These costs are well below the average cost of $3.28/W for Pacific Power 2015 commercial projects, and are similar to the most competitive costs in our standard program.**
6. **The project's total modeled above-market cost is $1,326,040. At $0.65/$W_{DC}$, the project incentive would be up to $1.25 million.**
7. **Lockheed Martin and the county would transfer to Energy Trust at least 90% of Renewable Energy Certificates (RECs) for the project's 25-year life.**

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

1. **Authorizes an incentive of $0.65/$W_{DC}$, up to $1,250,000, for the Rogue Valley International-Medford Airport Solar Project, payable on the following terms:**
   a. **The incentive will be paid in two payments: $800,000 on commercial operation and $450,000 after a performance period; and,**
   b. **Lockheed and the county will transfer to Energy Trust at least 90% of RECs for the project's 25-year life.**

Moved by: John Reynolds — Seconded by: Anne Root
Vote:
In favor: 12 — Abstained: 0
Opposed: 0

Heather Beusse Eberhardt re-joined the meeting at 2:51 p.m.

Staff Report

Highlights, Margie Harris

Margie described a recent participant, Medford School District, the first school district to enroll in Energy Trust's commercial Strategic Energy Management.

Margie reviewed the 2015 results, which will be published in the 2015 Annual Report on April 15. At the last board meeting, she shared the organization's progress to energy goals. To recap, Energy Trust

achieved 102 percent of the electric efficiency goal, 116 percent of the natural gas efficiency goal and 112 percent of the renewable energy generation goal.

Margie provided a sampling of accomplishments in the residential sector, including the growing number of customers purchasing LEDs, promoted through an advertising campaign and with an online interactive tool. The sector also launched an incentive for smart thermostats. In two months, customers purchased approximately 500 thermostats, nearly five times the amount expected. The New Homes program issued 2,500 energy performance scores, EPS™, which help homebuyers compare energy usage and carbon footprints.

In the commercial sector, the New Buildings program promoted high-performance new construction and broke every prior enrollment record. One-half of the 600 new construction projects enrolled were outside the Portland metro area. Existing Buildings participants saved energy with energy-efficient lighting, especially LEDs. In 2014, LEDs made up approximately 65 percent of Existing Buildings lighting savings. In 2015, that increased to 80 percent of savings. In Existing Multifamily, tenants saw savings from LEDs, showerheads, faucet aerators and advanced power strips installed in 26,000 individual units, including in 5,000 affordable housing units. Existing Multifamily wrote its largest single incentive check in 2015, paid to Home Forward for completing extensive upgrades to four different affordable housing properties.

In the industrial sector, two-thirds of natural gas savings were from its largest ever project, a regenerative thermal oxidizer that also helps the customer meet air quality requirements. 2015 was an important year for helping agricultural customers cut energy and water use, and 350 farmers and 30 nurseries participated with the Production Efficiency program. The sector also saw increased savings from customers investing in lighting, and completed 500 lighting projects, compared to 300 in the prior year.

The renewable energy sector helped install 1,800 solar systems, two hydropower systems and two biopower systems. The Solar program had outstanding performance in 2015, and supported 40 percent more systems than in 2014. The sector also provided $2 million in project development assistance to 29 projects.

In 2015, Energy Trust's support groups completed complementary work to support programs and serve customers. The Trade Ally Network welcomed 200 new trade and program allies. The organization received high customer satisfaction, exceeding the OPUC minimum annual performance measure. New and enhanced IT systems worked better for staff, contractors and customers.

Margie clarified that Energy Trust asks trade ally contractors and programs allies if they are Minority, Women or Emerging Small Businesses, and some companies volunteer the information.

Energy Trust has a powerful outreach team, which made 80 presentations and conducted outreach at 290 events to boost awareness of Energy Trust and connect with customers.

Margie announced Energy Trust will be providing natural gas efficiency programs and services to about 90,000 Avista customers in Oregon. The services will start with a limited pilot in 2016 and a full roll-out of programs to all customer types in 2017. This change came out of a general rate case and decoupling settlement at the OPUC.

Margie provided an update on OPUC dockets, including ongoing dockets and new activity expected from the passage of SB 1547. Related to SB 1547, the OPUC will lead a stakeholder meeting on April 21 to discuss a proposed task schedule related to the new legislation. Margie reviewed a number of dockets Energy Trust is tracking and providing information for as requested, making this a busy time for the OPUC and for us.

Margie reviewed the 2016 OPUC minimum performance measures, approved by the OPUC in February. The energy goals and levelized costs were adjusted to reflect the goals set forth in the annual budget. The only other change to the performance measures was the OPUC removing the NEEA-specific performance measure in favor of Energy Trust incorporating the performance metrics it has for NEEA in our annual reports.

Margie provided a staffing update. Mariet Steenkamp, new CFO, worked at Central City Concern where she performed functions very similar to what is needed at Energy Trust. JP Batmale, Energy Trust planning manager, was recently hired as OPUC liaison. Lori Miller, executive assistant, is replacing Ana Morel and starts mid-April.

Energy Trust was recently notified it ranks among one of the 100 Best Green Workplaces in Oregon. The final rankings will be released in June.

Margie previewed a new video and website in use to attract irrigation district customers to modernize their irrigation systems. The Irrigation Modernization initiative is delivered in coordination with Farmers Conservation Alliance, and looks to identify energy-efficiency and renewable energy opportunities, among other benefits.

2016 Legislation Update, Jay Ward

Jay provided a short update on three of the bills that passed the 2016 Oregon legislative session, including the Oregon Clean Electricity and Coal Transition Plan (SB 1547), a solar incentivization bill (HB 4037) and a biomass tax credit bill (SB 1507).The board's annual strategic planning workshop will include more information and staff analysis on potential impacts of SB 1547 on Energy Trust programs.

Adjourn

The meeting adjourned at 3:30 p.m.

The annual strategic planning workshop for the Energy Trust Board of Directors will be held May 19-20, 2016, at MercyCorps, Aceh Conference Room, 45 SW Ankeny St, Portland, Oregon.

The next regular meeting of the Energy Trust Board of Directors will be held Wednesday, June 8, 2016, at 12:30 p.m. at Energy Trust of Oregon, Inc., 421 SW Oak Street, Suite 300, Portland, Oregon.

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Alan Meyer, Secretary

Tab 2

Briefing Paper
CLEAResult Existing Homes Contract Extension

June 8, 2016

Summary

Extend the Existing Homes program management contract with CLEAResult Consulting, Inc. for one year, through December 31, 2017. This would be the third one-year extension out of a possible three. The executive director may extend the contract for one year if extension criteria are met and the board does not object.

Background

- The Existing Homes program provides technical assistance and financial incentives for single-family and manufactured homes.
- In December 2012, the board authorized a program management and delivery services contract beginning January 1, 2013 with a first-year budget of $7.2 million for Oregon and $250,000 for Washington services. The contract was amended in 2014/2015 and 2015/16 to adjust budget and savings goals consistent with board-approved budgets and action plans. The 2016 budget is $6.4 million for Oregon and $267,000 for Washington services.
- The December 2012 board resolution also directed staff to report to the board on CLEAResult's progress toward meeting contract extension criteria prior to recommending whether to extend the contract. The contract extension criteria are:
    1. Cross-program referrals
    2. Project pipeline
    3. Innovation
    4. Teamwork
    5. Satisfactory execution of statement of work deliverables

Discussion

Staff has assessed CLEAResult's performance over the past several years:

1. **Cross-program referrals:** CLEAResult has done a good job coordinating with the existing multifamily, new homes, residential products, and Energy Trust solar programs—sorting customer participation through marketing collateral, outreach, customer triage and call center efforts. CLEAResult has helped mitigate market confusion between existing single family homes and small multifamily dwellings in support of a positive customer experience. CLEAResult has also helped with market research and development of new measures (smart thermostats, retail water heaters) which have expanded to the retail products program in 2016.
2. **Project pipeline:** In 2015, CLEAResult accelerated savings achievement earlier in the year and maintained accurate forecasting for the remainder of the year, which saved 108% of gas goals and 114% of electric goals. CLEAResult developed and implemented targeted marketing campaigns to fill project pipelines in alignment with portfolio savings objectives.

The 2016 savings forecast is strong and staff maintain high confidence in CLEAResult's ability to achieve end-of-year savings goals.

3. **Innovation:** CLEAResult has enhanced program delivery, reduced program touch points and improved program cost effectiveness. Building upon electronic enhancements, including an incentive application web form and a Trade Ally Portal, CLEAResult introduced "Instant Incentives," which allow a customer to access incentives at the time of purchase through trade allies. Twenty-four percent of project incentives were paid to trade allies in 2015, double the amount from 2014. This was accompanied by a 10 percent reduction in cases of missing incentive application information and a 50% reduction in processing time. In addition to delivery innovation, CLEAResult has supported Energy Trust in significant Existing Homes program redesign efforts over the past several years, analyzing the projected decline of key measures over the next 5 years, and developing and adjusting cost-effective measures. CLEAResult demonstrates a strong competency in measure screening, pilot development, and implementation.
4. **Teamwork:** CLEAResult understands Energy Trust's priorities and cooperates well, supporting new initiatives, incorporating planning and evaluation results into program design, submitting invoices in a timely manner and complying with financial audit principles and monthly reporting requirements. Coordination between the Existing Homes and Retail products programs has led to the addition of retail incentives for smart thermostats and efficient gas and electric tank water heaters. CLEAResult has worked closely with Energy Trust staff to update, adjust, and remove measures according to cost-effectiveness criteria and improve the program-level cost effectiveness, especially related to the gas portfolio..
5. **Deliverables:** CLEAResult maintains a strong focus on achieving and documenting its contractual deliverables. They uphold Energy Trust customer experience priorities and comply with established service level agreements and systems use requirements. Importantly, as of the end of May, CLEAResult is on track to achieve the anticipated savings levels that were expected by this point in the year, providing confidence about achievement of 2016 savings goals for the Existing Homes program.

Next Steps

Staff finds that CLEAResult has satisfied the requirements for contract extension, and recommends that the contract with CLEAResult Consulting, Inc. for delivery of the Existing Homes program be extended to December 31, 2017, consistent with the 2017 board-approved budget and action plan. If the board does not object, the executive director or designee is authorized to sign a one-year contract extension.

Briefing Paper
CLEAResult New Homes Contract Extension

June 8, 2016

Summary

Extend the New Homes program management contract with CLEAResult Consulting, Inc. for one year, through December 31, 2017. This would be the first one-year extension out of a possible three. The executive director may extend the contract for one year if extension criteria are met and the board does not object.

Background

- The Existing Homes program provides technical assistance and financial incentives for newly constructed single family homes.

- In December 2014, the board authorized a program management and delivery services contract beginning January 1, 2015 with a first-year budget of $2.7 million. The contract was amended in 2015/16 to adjust budget and savings goals consistent with board-approved budgets and action plans. The 2016 budget is $2.8 million for Oregon.

- The December 2014 board resolution also directed staff to report to the board on CLEAResult's progress toward meeting contract extension criteria prior to recommending whether to extend the contract. The contract extension criteria are:

    1. Cross-program referrals
    2. Project pipeline
    3. Innovation
    4. Teamwork
    5. Satisfactory execution of statement of work deliverables

Discussion

Staff has assessed CLEAResult's performance over the past several years:

1. **Cross-program referrals:** CLEAResult has done a good job coordinating with the existing homes, commercial new construction, and Energy Trust solar programs. CLEAResult have successfully promoted solar readiness in new construction, and have made referrals for project commissioning. The program team is developing an initiative for small multifamily new construction in coordination with the commercial new construction program. New Homes developed a cross-program mid-stream initiative with Existing Homes promoting high efficiency fireplaces with energy saving, interruptible ignition systems.

2. **Project pipeline:** In 2015, CLEAResult achieved 130% of contract gas goals and 109% of electric goals. The program achieved a 36% market share for new homes, reflecting a broad pipeline of homes ranging from national production builders to custom built homes. The

2016 program year projects an increase in savings and homes from 2015, and is presently on target to meet electric and gas goals.

3. **Innovation:** CLEAResult successfully worked with Energy Trust and software provider Pivotal Energy Solutions to integrate the Axis program management database into program operations. While launched in 2014, CLEAResult continued work in 2015 to optimize user experience, and streamline project submissions reducing soft-costs for program participants. CLEAResult has encouraged market-based innovation which has resulted in builders increasingly identifying unique solutions to achieving above-code building performance. CLEAResult have supported Energy Trust's efforts to orient the new construction program towards developers, and to provide technical assistance to municipal planning commissions. During 2016, CLEAResult are working with Energy Trust to update the program's incentive structure.

4. **Teamwork:** CLEAResult have fostered a collaborative environment between Energy Trust, the Home Builders Association, NEEA, and other industry stakeholders. The design of the New Homes program encourages collaboration between program verifiers and home builders. CLEAResult's field team have been exemplary in promoting teamwork and collaboration between the trades through program activities such as early design assistance meetings.

5. **Deliverables:** CLEAResult maintains a strong focus on achieving and documenting its contractual deliverables. Program staff work closely with Energy Trust to identify any barriers to success with adequate foresight and advance timing. Above all else, CLEAResult's management of the New Homes program has led to widespread industry recognition of Energy Trust's program, which is reflected in strong market-penetration metrics and adoption by a range of builders.

Next Steps

Staff finds that CLEAResult has satisfied the requirements for contract extension, and recommends that the contract with CLEAResult Consulting, Inc. for delivery of the Existing Homes program be extended to December 31, 2017, consistent with the 2017 board-approved budget and action plan. If the board does not object, the executive director or designee is authorized to sign a one-year contract extension.

Briefing Paper
Ecova Products Contract Extension

June 8, 2016

Summary

Extend the Products program management contract with Ecova, INC. for one year, through December 31, 2017. This would be the first one-year extension out of a possible three. The executive director may extend the contract for one year if extension criteria are met and the board does not object.

Background

- The Products program provides prescriptive financial incentives to participants for the purchase and installation of energy efficient products. Products program is comprised of four components: Lighting and Showerheads, New Appliances, Kits & Giveaways, and Appliance Recycling. The program also provides prescriptive financial incentives to participants for the sale of energy efficient new manufactured home models and ductless heat pumps.
- In July 2014, the board authorized a program management and delivery services contract beginning January 1, 2015 with a first-year delivery of $3.5 million for Oregon. The contract was amended in 2015 to adjust budget and savings goals consistent with board-approved budgets and action plans. The 2016 delivery cost is $3.8 million.
- The December 2014 board resolution also directed staff to report to the board on Ecova's progress toward meeting contract extension criteria prior to recommending whether to extend the contract. The contract extension criteria are:
    1. Cross-program referrals
    2. Project pipeline
    3. Innovation
    4. Teamwork
    5. Satisfactory execution of statement of work deliverables

Discussion

Staff has assessed Ecova's performance over the past year and a half:

1. **Cross-program referrals:** Ecova has done a good job coordinating with the existing homes and new homes programs. They have also been very collaborative in sorting customer participation through marketing collateral, outreach, customer triage and call center efforts. Ecova has supported and performed market research to enhance program understanding of the changing lighting market and is adapting to changing program priorities as they occur.
2. **Project pipeline:** In 2015, Ecova achieved 108% of their electric goals and 83% of their therms savings. Gas savings from showerhead sales has been less than expected. Ecova implemented several strategies to reduce savings gap, but was not able to meet the goal.

The 2016 savings forecast is stronger and Ecova is working to achieve the portfolio goals, but Therm goals still are not forecast to be met.

3. **Innovation:** Ecova has enhanced program delivery and customer reach in the retail space. In 2015 they launched 18 new lighting promotions and 5 showerhead promotions, added 5 new retail partners, reached 15 new towns, expanded retailer partnerships with existing retailer, added a Pop-Up retailer partner, and launched our first limited-time online promotion. Ecova also developed new program relationships with Water Bureaus throughout as one strategy to increase gas savings and reach new customers. During 2016 Ecova is working closely with Energy Trust to track the changes in the lighting industry and to adjust program strategies to reach program savings goal.
4. **Teamwork:** Ecova understands Energy Trust's priorities and cooperates well, supporting new initiatives, incorporating planning and evaluation results into program design, submitting invoices in a timely manner and complying with financial audit principles and monthly reporting requirements. Coordination between the Existing Homes and Retail products programs has led to the addition of retail incentives for smart thermostats and efficient gas and electric tank water heaters. Ecova has worked closely with Energy Trust staff to update, adjust, and respond to the rapidly evolving lighting market and is working diligently to prepare for ongoing changes to the industry.
5. **Deliverables:** Ecova maintains a strong focus on achieving and documenting its contractual deliverables. They uphold Energy Trust customer experience priorities and comply with established service level agreements and systems use requirements.

Next Steps

Staff finds that Ecova has satisfied the requirements for contract extension, and recommends that the contract with Ecova, Inc. for delivery of the Products program be extended to December 31, 2017, consistent with the 2017 board-approved budget and action plan. If the board does not object, the executive director or designee is authorized to sign a one-year contract extension.

Briefing Paper
Program Management and Program Delivery Contract Terms

June 8, 2016

Summary

To provide context for contract extension and approval recommendations, staff has prepared a summary of Energy Trust's Program Management Contracts and Program Delivery Contracts, their possible durations, remaining extension term potential, and timing information about upcoming competitive RFP and/or RFQ processes. Staff will be available at the meeting to answer questions.

PMC	Program	End Date of Initial Term	Current Expiration Date	Possible Extensions to Initial Term	Extension Years Approved (Board Briefing Date(s))	Next Anticipated Extension Presentation	File #
CLEAResult Consulting, Inc.	Existing Homes	12/31/14	12/31/15	3 years	2/3 (7/29/15 for 1yr)	2016	1806
ICF Resources, LLC	Existing Buildings	12/31/14	12/31/16	3 years	2/3 (7/30/14 for 1 yr) (7/29/15 for 1 yr)	In rebid process	1778
CLEAResult Consulting, Inc.	New Buildings	12/31/15	12/31/17	3 years	2/3 (5/20/15 for 2 yrs)	2017	1962
Lockheed Martin Corporation	Existing Buildings - Multifamily	Through 12/31/18	12/31/18	2 years	0/2	2018	2366
Ecova, Inc.	Products	12/31/16	12/31/16	3 years	0/3	2016	2181
CLEAResult Consulting, Inc.	New Homes	12/31/16	12/31/16	3 years	0/3	2016	2182

PDC	Program	End Date of Initial Term	Current Expiration Date	Possible Extensions to Initial Term	Extension Years Approved (Board Briefing Date(s) if applicable)	Next Anticipated Extension Presentation	File #
Energy 350, Inc.	Production Efficiency	12/31/16	12/31/16	2 years	0/2	2016	1960
RHT Energy, Inc.	Production Efficiency	12/31/16	12/31/16	2 years	0/2		1957
Portland General Electric Company (PGE- CTS)	Production Efficiency	12/31/16	12/31/16	2 years	0/2		1959
Evergreen Consulting, LLC	Production Efficiency)	12/31/14	12/31/16	2 years	2/2 (5/14/14 for 1 yr) (5/20/15 for 1 yr)	In rebid process	1576
Cascade Energy, Inc.	Production Efficiency	12/31/14	12/31/16	2 years			1575
CLEAResult Consulting, Inc.	Existing Buildings	12/31/16	12/31/16	3 years	No extensions will be requested	In rebid process: staff intends to include future Commercial SEM management and delivery under Existing Buildings PMC contract	2195
HSTV, LLC dba Strategic Energy Management Group (SEG)	Existing Buildings	12/31/16	12/31/16	3 years	No extensions will be requested		2214

PMC			
PMC	Program	Final End Date[1]	Anticipated RFP (if contract extended for all possible extensions)
CLEAResult Consulting, Inc.	Existing Homes	12/31/17	Spring 2017
ICF Resources, LLC	Existing Buildings	12/31/16	In process
CLEAResult Consulting, Inc.	New Buildings	12/31/18	Spring 2018
Lockheed Martin, Inc.	Existing Buildings – Multifamily	12/31/20	Spring 2020
Ecova, Inc.	Products	12/31/19	Spring 2019
CLEAResult Consulting, Inc.	New Homes	12/31/19	Spring 2019

PDC			
PDC	Program	Final End Date[2]	Anticipated RFP/Q (if contract extended for all possible extensions)
Energy 350, Inc.	Production Efficiency – Custom Track	12/31/18	Spring 2018
RHT Energy, Inc.	Production Efficiency – Custom Track	12/31/18	Spring 2018
PGE-CTS	Production Efficiency – Custom Track	12/31/18	Spring 2018
Evergreen Consulting, LLC	Production Efficiency – Streamlined Track	12/31/16	In process
Cascade Energy, Inc.	Production Efficiency – Streamlined Track	12/31/16	In process

[1] Assumes each of the possible extension years are offered and accepted by the PMC
[2] Assumes each of the possible extension years are offered and accepted by the PDC

Tab 3

Energy Trust of Oregon

Smart Thermostat Pilot Evaluation

Prepared for Energy Trust of Oregon

Prepared by Apex Analytics, LLC
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(303)590-9888
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March 1, 2016

Acknowledgements

The Evaluation Team would like to acknowledge the review, support, and advice given by two third-party quality assurance reviewers, Scott Pigg (Seventh Wave) and Ken Agnew (DNV-GL).

Table of Contents

1. Executive Summary

In 2013, Energy Trust of Oregon (Energy Trust) launched a pilot, the Nest Thermostat Heat Pump Control Pilot, to study the electric energy savings impacts of installing a smart thermostat in lieu of heat pump controls in heat-pump heated homes. It was proposed in response to the slow uptake and potentially poor installation practices for Energy Trust's heat pump control measure. The Nest Thermostat Heat Pump Control Pilot was a successful undertaking, with high participant satisfaction and robust energy savings.

In 2014, Energy Trust initiated a "Smart Thermostat Pilot" to continue testing smart thermostats and explore the potential for a new cost-effective gas savings measure. This Pilot focused on the Honeywell Lyric and the Nest Thermostat, two smart thermostats in the market. Both thermostats claimed to offer simple user interfaces with advanced features to save energy. Features included automated and occupancy-based temperature management and various remote control options. Both products were available at retail stores for approximately $250 (at the time of the launch of this Pilot).

The primary goals of the evaluation were to:

- Quantify the annual natural gas savings that result from installing smart thermostats in single family homes heated with a gas furnace.
- Identify variations in savings between participants based on demographic and household characteristics and any differences in savings between the two thermostats.
- Obtain feedback from program staff and participants to understand thermostat installation issues, how well the thermostats worked, and what kinds of operational issues were encountered.
- Understand participants' interaction and satisfaction with the thermostats.

Ultimately, the evaluation will help determine if smart thermostats are a viable technology for achieving cost-effective gas savings in homes heated with gas furnaces, and whether they should be incented by Energy Trust.

Pilot Background

The Pilot was developed and executed by the Existing Homes program, which is implemented by CLEAResult. The program purchased all of the thermostats up-front, maintaining inventory control for the Pilot by accurately recording product serial numbers. Energy Trust offered participants discounted smart thermostats for $219 per unit, made available through a bulk-purchase order. This study required participants to self-install (either on their own or through a contractor of their choice) their thermostat, connect it via WiFi to the internet and link it to their online Nest or Honeywell account, and then forward the account verification email to Energy Trust for participant verification and rebate processing. Participants received a $200 rebate for their thermostat, so they only paid $19 in the end.

The Pilot ran from the fall of 2014 through the spring of 2015, covering one entire heating season. Participants were recruited primarily through a collaborative marketing effort with NW Natural. Based on eligibility criteria provided by the program, NW Natural randomly selected and contacted a sample of 22,000 customers who paid their bills online, had a gas account for at least a year and had a winter gas usage at least twice that of summer months.

The recruitment email sent by NW Natural directed interested candidates to complete an online survey to determine if they qualified to participate in the study. The program performed additional recruiting among Energy Trust employees and program management contractors to increase the number of participants[1]. Candidates who met the criteria received a follow-up qualification email from Energy Trust containing information and directions on how to purchase the thermostat. Candidates whose answers indicated they did not meet one or more of the eligibility criteria received a customized email informing them of the reason they did not qualify.

Implementation staff controlled for product selection bias by randomly assigning qualifying candidates into one of two treatment groups based on the two thermostats involved in this study. Those in the Nest group were provided a link to purchase a Nest in their qualification email, while candidates in the Lyric group received a link to purchase a Lyric.

In addition to the treatment groups, NW Natural provided approximately 1,000 randomly selected customers' information to the Energy Trust Evaluation Team to serve as a comparison group for the billing analysis. These customers met the same pre-screening criteria as those customers who were contacted. Customers in the comparison group were not contacted.

Evaluation Methodology

There were three primary components associated with this evaluation effort: staff interviews, participant surveys, and a billing analysis.

Staff interviews were conducted with the goal of collecting insight and feedback from those staff members most familiar with the Pilot and to supplement the program summary report compiled by the program management contractor, CLEAResult (see Appendix D). Interviews were held with four members of CLEAResult, and one was held with a member of the Energy Trust team.

There were two separate participant surveys administered to the entire population of Pilot participants, one in January 2015 and a second one at the end of the heating season in May 2015, but only to those who had completed the first survey. Participant surveys were conducted to understand participant

[1] The supplemental recruitment involved non-Existing Homes program management contractor staff, program delivery contractor staff, Energy Trust, and NEEA staff.

usage, perceptions, satisfaction and reactions to the thermostats, as well as changes in these metrics over time as participants became more familiar with the thermostats.

Finally, a billing analysis was performed to estimate the impacts of the thermostats on gas usage. The analysis was performed by Energy Trust Evaluation staff and reviewed by Apex Analytics, Mr. Ken Agnew of DNV-GL, and Mr. Scott Pigg of Seventhwave.

Findings

The findings presented here are ordered chronologically and align with how participants experienced the Pilot: the early stage includes participant recruitment and installation; the middle stage includes participant experiences with the thermostats, including usage of, satisfaction with, and feedback on the thermostats; and the final stage, after the first heating season in which the thermostats were installed, includes determining the gas savings associated with thermostats.

Finding 1: Recruitment – The self-installation model proved to be highly cost-effective, but may have led to substantial attrition among interested and qualified customers.

Staff concluded that the recruiting and targeting of customers was considerably improved from the approach used for the Nest Heat Pump Control Pilot. Acquiring approximately 400 participants in less than two months, with minimal cost to Energy Trust, proved the ease and success of this model. Participants that required support successfully received assistance from the manufacturers either via phone or website rather than having to rely on Energy Trust or CLEAResult staff for guidance.

The most serious recruiting challenge, however, arose at the gap between qualifying and purchasing participants: only 35% of candidates who completed the intake survey and qualified for the study actually purchased a thermostat, despite being offered a $250 thermostat for only $19. Staff speculated that the large drop– between those who completed the survey and qualified to participate, to those who actually purchased a thermostat– was likely due to the perceived technical difficulty of self-installation of the thermostats.

Finding 2: Installation – Thermostat installation was faster and easier for Nest participants compared to Lyric participants.

Nest participants were able to install the thermostat in less time and with less difficulty than the Lyric participants. Respondents reported that the average installation time for the Nest was less than an hour (51 minutes) whereas the Lyric took one hour and 13 minutes – a difference of only 22 minutes, but about 40% longer. Only 4% of Nest participants believed initial setup and configuration was either difficult or very difficult, compared to 17% of Lyric participants. An even higher percentage of Lyric users indicated experiencing installation issues (37%) – over three times that of the Nest user base (10%).

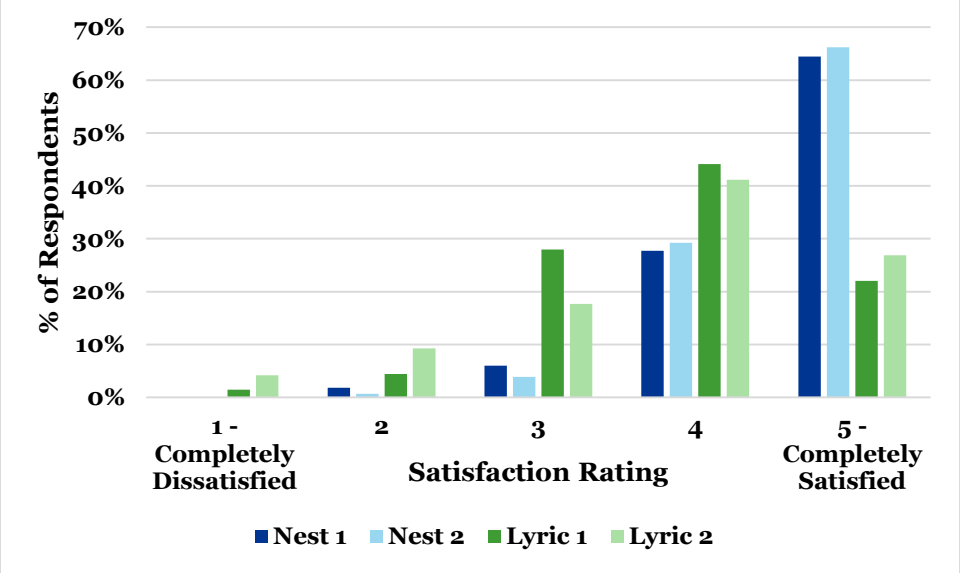
Participant satisfaction with installing the thermostatwas highly dependent on the device: 90% of participants indicated a satisfaction rating of either a 4 or 5 out of 5 for the overall installation process for the Nest, while only 63% of the Lyric participants provided an equivalent satisfaction rating for their installation process.

Finding 3: Satisfaction – Nest users reported much higher rates of satisfaction with the user interface, scheduling, and overall thermostat compared to the Lyric users.

The vast majority (95%) of Nest participants rated the overall user interface either easy or very easy to use, while only 70% of Lyric participants gave the same rating for their thermostat. Scheduling proved to be the most difficult aspect of the Lyric, with over 20% of participants indicating this was somewhat or very difficult, whereas only 3% of Nest participants reported experiencing the same difficulty. Lyric participants also experienced considerably more non-installation-based issues: 50% of first-survey and 27% of second-survey respondents reporting additional issues with their Lyric thermostat; whereas 16% of first-survey and 7% of second-survey respondents experienced Nest-related post-installation issues.

In terms of overall satisfaction, Nest users gave considerably higher satisfaction ratings relative to the Lyric: over 65% of Nest users rated the thermostat a 5 out of 5, whereas only 24% of Lyric users rated the thermostat a 5 out of 5 (Figure 1). In addition, although participants were committed to retaining their thermostats for the duration of the Pilot, if given the option to return their units, only 10% of Nest participants would have returned the unit whereas over three times as many Lyric participants (34%) would have returned the thermostat.

Figure 1. Satisfaction rating with smart thermostat



Source: First and second participant surveys. Don't know/refused: Nest 1: N=0; Nest 2: N=0; Lyric 1: N=0; Lyric 2: N=1.

Finding 4: Thermostat Use – Nest users were more likely to utilize the occupancy detection features and less likely to override the unit.

One of the primary energy-saving features of the smart thermostats is occupancy detection. For the Nest, this feature is called "Auto-Away," which minimizes heating and cooling when the device determines no one is home based on occupancy sensors (motion sensors). For the Lyric, this feature is called "geofencing," which is dependent on the GPS location of the smartphone that is matched with the thermostat. When the Nest thermostat is installed, the Auto-Away feature should be preset as enabled, whereas for the Lyric, the geofencing is not enabled by default, and the user is required to enable the geofencing during initial setup.

Nest users overwhelmingly left Auto-Away enabled: 88% of first- and second-survey respondents reported that they left this feature enabled. The Lyric respondents were not as likely to have enabled geofencing: only 57% of Lyric users had enabled this feature by the first survey, and slightly less (50%) had this feature enabled by the second survey.

In addition, Nest participants showed a 60% relative decline in daily adjustments between the first and second survey. Lyric participants only showed a 35% relative decline in daily adjustments, indicating participants continued to rely on manual adjustments. The fact that a significant proportion of Lyric participants continued to make frequent adjustments (daily or weekly) shows that participants still were unable to rely on the thermostats to perform one of their primary functions – to automate home heating and cooling.

Finding 5: The energy savings, the most important feature associated with this study, proved to be the most notable difference between the two thermostats: Nest participants showed decreased gas consumption while Lyric participants showed increased gas consumption.

The results of this billing analysis show that the Nest thermostat was associated with significant energy savings. It produced about 6% heating load savings (34 therms/year), on average, in gas-heated homes. On the other hand, the Honeywell Lyric thermostat was associated with significant increases in energy use. The Lyric added 4-5% to heating loads (24-29 therms/year), on average, in gas-heated homes. The difference in realized energy savings between the two thermostats was unambiguous. From the subgroup analysis, the Evaluation Team determined that there was a negligible effect on overall savings from participants recruited from Energy Trust employees and contractors and from those who removed their thermostats mid-Pilot. For Nest, homes located in Oregon outside the Portland Metro area appeared to have higher gas savings than other areas. Homes where the previous thermostat was manual or not programmed appeared to have substantially higher savings among Nest participants, although there was no difference among Lyric homes. For both thermostat groups, there appeared to be lower savings in homes where the occupancy detection features had been disabled, as expected.

MEMO

Date: April 6, 2016
To: Board of Directors
From: Marshall Johnson, Residential Sector Senior Program Manager
Dan Rubado, Evaluation Project Manager
Sue Fletcher, Communications and Customer Service Senior Manager
Subject: Staff Response to the Gas Smart Thermostat Pilot Evaluation

The gas smart thermostat pilot and evaluation provided a comparison of two smart thermostat products available on the market in 2015. During the pilot, smart thermostats were in the early stages of market adoption.

The evaluation provided solid evidence that the second generation Nest Learning Thermostat can provide significant, cost-effective energy savings in single family homes heated with forced air furnaces. This was particularly notable since the pilot thermostats were self-installed and largely replaced programmable thermostats. Participants were generally satisfied with the Nest thermostat and reported very few problems with it.

Honeywell's first generation Lyric thermostat had lower satisfaction ratings, a higher prevalence of problems, and did not lower gas usage. Energy Trust recognizes that the Lyric thermostat evaluated was the first version of this product. Since the pilot, Honeywell has released an updated model. The energy savings and customer satisfaction for the updated model have not yet been independently verified.

The observed differences between the two products emphasizes the need to proceed cautiously into this new market. Smart thermostats are a viable home control and automation technology, but at this early stage there can be significant differences in performance between products, even between those with similar features. At this time, creating a general specification for smart thermostats to qualify for incentives has proven difficult.

As a result of the pilot, Energy Trust has an incentive for smart thermostats for all heating system types in several different market channels. The Nest thermostat is currently the only product that qualifies. A $50 per household incentive is available for online and retail purchases. While the first generation Lyric thermostat did not achieve performance levels needed to provide an incentive, Energy Trust is vetting additional smart thermostat products that may qualify for this incentive in the near future. Rather than conducting further pilots, Energy Trust plans to rely on credible, third-party studies of energy savings and customer satisfaction to screen new products. In the future, Energy Trust may be able to adopt ENERGY STAR's proposed performance-based certification to qualify smart thermostats for incentives.

In the near term, Energy Trust will continue to look for new opportunities for cost-effective energy savings in the home automation and controls market. A next effort will be a pilot of Nest's "Seasonal Savings" algorithm, which can remotely make minor adjustments to thousands of Nest thermostat users' set points and schedules, to save a small percentage on heating and cooling at a low cost per household.

Evaluation of Energy Trust of Oregon's CORE Improvement Pilot

Year 2 Report

Prepared for:
Energy Trust of Oregon

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Executive Summary

The CORE Improvement (CORE) pilot was an offering within Energy Trust of Oregon's (Energy Trust) Production Efficiency (PE) program that helped medium-sized industrial customers (i.e., those spending $50,000 to $500,000 annually on electricity and natural gas combined) implement strategic energy management (SEM) practices at their facilities. CORE was implemented by Triple Point Energy (Triple Point), an energy consulting firm specializing in delivering strategic energy management programs to the industrial market. CORE was modeled after the successful Industrial Energy Improvement (IEI) initiative also offered by Energy Trust and implemented by Triple Point. The goal of IEI and CORE is to put into operation at each participant facility a process of continuous energy management improvements which enable energy savings and reductions in energy intensity.

Initially launched as a pilot, CORE consisted of two Cohorts: Cohort 1 began in July 2012 with 11 participants and concluded in October 2013 with nine, while Cohort 2 began in August 2013 and concluded in October 2014 with 12 participants. During their CORE participation, Cohorts conducted activities to identify, implement, and evaluate SEM practices.

Energy Trust's industrial SEM offering has evolved as a result of the pilot's success. Medium and large industrial customers are now served through a single program offering. This was a direct outcome of the pilot finding that the SEM experience for medium-sized customers was not significantly different from large customers' experience with IEI.

Navigant Consulting, and their partner, DNV GL (together the "Navigant team"), conducted an impact and process evaluation of the CORE pilot. This was a multi-year evaluation tracking feedback and program impacts of the two Cohorts over several years. The first report was published on September 4, 2014 and covered the activities of Cohort 1 after their initial engagement period[1]. This report discusses the activities conducted by Cohort 2 and follows up with Cohort 1 about a year after the end of their CORE participation to gauge the persistence of SEM practices. This report also contains an impact evaluation of the savings achieved by Cohort 1 due to their participation in CORE.

Evaluation Objectives

The purpose of the CORE evaluation was to verify whether medium-sized industrial customers can embrace and adopt SEM practices and embed them in their corporate culture given the inherent time and resource constraints of smaller industrial sites. The goals of the evaluation were to test and refine the delivery model, compile feedback and lessons learned, and determine which types of companies are successful with SEM. In addition, the evaluation intended to verify the energy savings resulting from the program, assess the persistence of those savings, and identify the best methods for evaluating the impacts of CORE.

Evaluation Methodology

For this second year report, the Navigant team conducted a process and impact evaluation using data from both Cohorts.

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[1] *Evaluation of Energy Trust of Oregon's CORE Improvement Pilot*, Navigant Consulting, September 4, 2014. http://assets.energytrust.org/api/assets/reports/CORE_Year_1_Evaluation_Report-Final_wSR.pdf

For the process evaluation, the Navigant team conducted in-depth interviews to assess whether CORE is operating effectively, delivering value to participants, and promoting the adoption and persistence of SEM practices among small industrial customers. The Navigant team interviewed the following parties:

- Energy Trust program management staff;
- Representatives from Triple Point;
- Each of the nine participants in Cohort 1; and
- Each of the twelve participants in Cohort 2.

The Navigant team performed an impact evaluation of the Cohort 1 participants and a review of the participant MT&Rs for Cohort 2 participants. The Cohort 1 evaluation included a site visit; obtaining production, weather, and energy data for the site; a review of the monitoring, targeting, and reporting spreadsheet models (MT&Rs); and a calculation of savings since implementation of the program.

Process Evaluation Findings

Navigant found that customers in both Cohorts experienced successes and challenges when implementing SEM principles through CORE. Participants learned SEM principles and understood where their energy savings were coming from through use of the tracking method learned in CORE. Participants also learned from their peers and shared information among themselves. Participants retained energy-saving O&M measures that they implemented during CORE. However, participants had difficulty continuing to follow the SEM practices that led to those savings after the end of the program intervention. These practices included tracking their energy, identifying new opportunities, maintaining an energy team, engaging employees, and generally prioritizing energy management. In summary, Navigant found that the CORE participation led to customers implementing savings that would themselves continue to persist, but customers would not be able to generate new savings because they did not retain the practices that led to those savings. Interviewees suggested that Energy Trust could help them maintain efficient practices later by continuing to offer assistance.

Our findings suggest that medium-sized industrial customers can adopt SEM practices as effectively as large customers. However, not all CORE participants were able to embed SEM practices in their corporate culture without continuing intervention from Energy Trust. More than one year after their CORE participation, fewer than half of Cohort 1 customers were continuing SEM practices: four were continuing to track their energy; only two had added new projects to their opportunity register, although three others had continued to implement projects already on their opportunity register; three continued to follow their energy policy; and four continued to set a numeric energy reduction goal (one had a non-numeric goal).

Impact Evaluation Findings

The verified first year electric savings for Cohort 1 was 1,776,366 kWh for a 91% realization rate. The verified second year savings was 1,433,995 for a 74% realization rate. These findings indicate that the majority of the savings from CORE persisted over a 2-year period and that a three-year measure life is feasible. Table 1 summarizes the electric savings for sites included in the evaluation. Participant PE5409 had two separate models for its individual production lines and so separate results are provided for them. The overall realization rates are the sum of each year's *ex post* savings divided by the sum of the *ex ante* savings.

Table 1. Summary of Electric Savings Results

Participant ID	*Ex Ante* kWh	*Ex Post* Year 1 kWh	*Ex Post* Year 2 kWh	Year 1 Realization Rate	Year 2 Realization Rate
PE5398	261,223	487,148	256,643	186%	98%
PE5399	125,209	86,940	326,172	69%	261%
PE5402	72,148	Unavailable	Unavailable	Unavailable	Unavailable
PE5405	426,689	343,379	441,552	80%	103%
PE5407	52,682	87,368	70,581	166%	134%
PE5409	218,327	275,729	7,591	126%	3%
PE5409	24,969	38,882	70,581	156%	283%
PE5411	837,115	456,920	260,875	55%	31%
Total	**1,946,214***	**1,776,366**	**1,433,995**	**91%**	**74%**

**The total does not include ex ante savings from site PE5402, as ex post savings were unavailable for this site.*

Table 2 summarizes the gas savings for sites included in the evaluation. The overall gas savings were slightly negative, but this is treated as a zero percent realization rate, as the uncertainty is high for low savings values as a percent of total site usage. Gas savings were low primarily because most sites did not use significant amounts of gas to begin with, and of those that did, most focused on electricity measures instead of gas measures. Thus, the low gas savings found in the pilot are not necessarily an indicator of the ability to achieve gas savings through SEM.

Table 2. Summary of Gas Savings Results

Participant ID	*Ex Ante* therms	*Ex Post* Year 1 Therms	*Ex Post* Year 2 therms	Realization Rate
PE5399	2,324	-3,573	-564	0%
PE5402	2,419	Unavailable	Unavailable	Unavailable
PE5405	8,534	-337	-138	0%
Total	**13,277**	**-3,910**	**-702**	**0%**

The Navigant team found that the model methodology was reasonable and accurately reflected savings at the sites with a few exceptions:

- The implementer calculated annual savings based on the last three months of the implementation period, which sometimes did not account for seasonal effects. At one site with seasonally-dependent production, Navigant found lower savings when evaluating the model using a full year of data.
- One site had much higher production in the Year 2 post-implementation period than in the baseline period, which invalidated the model for Year 2.
- Finally, the Navigant team was not able to verify any gas savings for Cohort 1. Navigant was only able to obtain gas models for two sites, and both of those showed no savings. It was unclear whether customers lacked gas savings opportunities, customers did not take advantage of existing gas savings opportunities, or Triple Point did not sufficiently identify and analyze potential gas measures.

The Navigant team did not evaluate Cohort 2 savings during this analysis year. Nevertheless, Navigant conducted a review of final reports and MT&Rs for Cohort 2 participants. Navigant generally found that the MT&Rs have enough information to use them for tracking energy consumption and savings, and that the assumptions and models used to track the energy consumption and savings are reasonable.

Recommendations

Based on the findings, the Navigant team recommends the following actions to improve future iterations of CORE:

- **Stick with a good thing.** Energy Trust should maintain the Cohort format of the training and workshops as these were successful at engaging participants in both Cohorts, and participants in both Cohorts found them useful. The program has struck a good balance between group workshops that facilitate experience sharing and networking and individual workshops that focus on site-specific activities.
- **Stay in touch.** Several participants in both Cohorts specifically asked for continuing engagement beyond CORE or said that they planned to reach out to Triple Point after CORE for help. This suggests that continuing assistance to participants even after the CORE year is necessary to help address some of the challenges faced by participants. Energy Trust should also consider providing assistance to customers to update their MT&R baselines as needed since modeling work of this complexity seems to be beyond the ability of most customers. Energy Trust is initiating a Continuous SEM effort to address these issues.
- **Continue to motivate participants.** Milestone incentives were an important factor in maintaining engagement, and Energy Trust should consider including this approach in future iterations of the program. Even though the energy savings outweighed the milestone incentives for most participants (and participants were fully aware of this), the milestones provided direct motivation for participants to perform certain tasks. For some, the appearance of receiving a check was an important factor in getting management and others in the company on board. From the perspective of management, milestone incentives may serve as a hedge against the inherent uncertainty in devoting time to SEM: companies can be confident that they will get some payoff from participating even if they do not ultimately achieve energy savings in the first year.
- **Take a flexible approach to energy use tracking.** Because of the difficulty of verifying energy savings for sites that save a low percentage of energy, such as around five percent, Energy Trust should consider a different method (other than MT&R) for these sites, such as a key performance indicator (KPI) or bottom-up analysis. If an MT&R model is used, the following parameters should be followed:
    - If only monthly data are available, the baseline period should be at least two years to ensure that savings based on it are reliable.
    - Energy savings should be analyzed over a full year or should be adjusted for seasonality when only a few months of data are available.
- **Exploit opportunities for gas efficiency**. Future program offerings should focus more on identifying opportunities for gas savings for participants who are non-transport gas users.

MEMO

Date: April 7, 2016
To: Board of Directors
From: Kim Crossman, Industry and Agriculture Sector Lead
Dan Rubado, Evaluation Project Manager
Subject: Staff Response to the CORE Pilot Year 2 Evaluation Report

This report confirms previous evaluation findings that smaller industrial sites can be successful with Strategic Energy Management (SEM). As seen in past SEM studies, the participants highly value the workshops, the technical services and coaching, networking with their peers, and the energy savings they were able to achieve. However, participants' ability to maintain their SEM activities post-intervention appeared to wane over time. Even so, the operations and maintenance measures that were implemented during CORE tended to stay in place and the energy savings appeared to persist. In addition, participants increased the number of capital efficiency upgrades they undertook as a direct result of CORE.

Annual savings were estimated reasonably well in most cases. However, seasonality in production, and therefore savings, introduced significant error into the savings estimate for one site. Ensuring that SEM implementers properly account for seasonal variations in savings will be important going forward.

Staff turnover and persistence of SEM practices were challenges for many participants and Energy Trust is trying to address these through its updated SEM offerings. As a result of the CORE pilot, Energy Trust created a single industrial SEM offering called Core SEM, which combines large and small industrial sites in mixed cohorts. Energy Trust is also launching a new, continuous SEM offering for industrial customers that have participated in SEM training, to keep them engaged, help maintain and build their SEM activities, achieve additional energy savings, and meet customer demand for ongoing SEM support.

EVERGREEN ECONOMICS

2014 - 2015 New Homes Program Process Evaluation

A Report to Energy Trust of Oregon

FINAL Report March 17, 2016

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Acknowledgements

John Boroski was the Evergreen Economics project manager for this report. Other Evergreen Economics staff contributing to this report were John Cornwell, Joe Clark, and Sarah Monohon. CIC Research administered the Real Estate Trade Ally web survey.

1 Executive Summary

This report presents process evaluation findings for Energy Trust's New Homes program based on in-depth interviews with participating homes verifiers and a web-based survey of real estate trade allies that received training on Energy Trust's Energy Performance Score ™ (EPS). Evergreen staff also completed interviews with several program implementation staff and their subcontractors, and reviewed program participation data in the Project Tracking database. The report also includes data on the Oregon single-family new construction market. The evaluation covers the 2014-2015 program years and occurred between July 2015 and March 2016. This evaluation does not cover program operations in southwest Washington.

Overall, Energy Trust's New Homes program is continuing to perform well and make progress towards market transformation. EPS market share in Oregon has increased robustly— from almost 21 percent in 2013 to 36 percent in 2015— and the program attained its electric and gas savings goals in both 2014 and 2015. Notably, the adjusted 2014 - 2015 incentive structure for builders and verifiers has increased the overall efficiency of EPS homes. Whereas the typical EPS home followed Path 2 under the previous incentives scheme, the majority of homes completed in 2014 – 2015 are equivalent to Path 3 (i.e., at least 25 percent more efficient than state code). The program has also continued to add new builder trade allies. Almost 250 program builders constructed EPS homes in 2014 and 2015, compared to 220 program builders in 2012 and 2013.

In addition, the program has maintained positive relationships with multiple verifiers to assist builders through the construction process, inspect homes and obtain EPS scores. Overall, 17 different firms completed home verifications in 2014 and 2015 (through August). The market based verifier model appears to be working well generally and active verifiers are trying to recruit new participant builders. Following are some additional findings from this evaluation:

1. Interviewed verifiers liked the 2014 - 2015 incentive structure as they are directly rewarded for pushing builders to construct more efficient homes.
2. Verifiers are also very satisfied with technical guidance provided in the program Field Guide and from communications with program staff.
3. Verifiers have high satisfaction using the online Axis database now, as the initial software "bugs" have been fixed and their hands-on experience has increased.
4. Seven of 10 interviewed verifiers plan to grow their verification business over the next year, with three verifiers planning for aggressive expansions by targeting new builders.
5. The Axis database has made the home verification and incentive delivery process much more efficient and eliminated most of the manual data entry that was required.
6. Primary reasons for builder non-participation include: higher equipment costs, perceived low customer demand for EPS, perceptions of "onerous" paperwork, lack of educated local subcontractors, and/or objections to the program's relatively high insurance requirements. In addition, the current "hot" housing market reduces the need for (some) builders to differentiate themselves from competitors.

7. Surveyed real estate agents provided positive course evaluation feedback. Training elements that they value most are: site visits to actual EPS homes, information/tools that can be directly applied to their business, and peer-to-peer role playing activities that help trainees become comfortable talking about EPS homes.
8. Over half of the surveyed realtors said that they have changed the way they promote and sell EPS homes and/or energy efficiency to their clients as a result of Energy Trust's training.
9. Over half of the realtors said that an EPS has a positive sales impact (faster sale or higher price), and none said that it has a negative sales impact. Overall, customer demand for energy efficiency is increasing slowly.
10. All of the surveyed realtors believed that having EPS scores automatically uploaded into the Multiple Listing Service that they use would be useful.

To continue building on the program's success, Energy Trust should do the following in 2016 (if not already underway):

1. The program should try to recruit more builders in the Bend and southern coast regions, where homebuyers may be particularly inclined to seek out energy efficient homes based on their demographics and environmental values.
2. Collaborate with affordable housing builders to see if the program can better serve them, with or without program design changes.
3. Conduct more Early Design Assistance charrettes in Eastern and Southern Oregon to build upon the lunch-and-learns that the program has already been offering.
4. Continue to educate newer larger volume participant builders on energy efficient measures and practices, so they can increase the efficiency of their program homes over time.
5. Future realtor trainings could focus more on high efficiency windows and HVAC systems, since these are measures where the gap between customer interest and realtor self-reported knowledge is greatest.
6. Give more attention on how to interpret the EPS in the realtor trainings, so realtors can accurately convey this information to their customers and enhance EPS credibility.
7. Develop a system for automatically uploading EPS scores to a central repository where real estate agents have access to all EPS homes (new and existing). Ideally these would be the same listing services that realtors already use. Currently, real estate agents are not inclined to upload EPS information themselves (provided they get it from a builder or verifier), which is hindering public awareness of EPS.
8. Continue to advocate that EPS scoring be included in the updated residential building code as a performance-scoring pathway to code compliance. This would likely be the most efficient way to rapidly increase builder and consumer acceptance of EPS.

MEMO

Date: April 14, 2016
To: Board of Directors
From: Mark Wyman, Residential Sector Program Manager
Dan Rubado, Evaluation Project Manager
Subject: Staff Response to the 2014-2015 New Homes Program Process Evaluation

This evaluation report underscores that the New Homes program has been very successful in building market share and achieving its energy savings goals. EPS is starting to get a strong foothold in the market and more builders and realtors are familiar with it. Lagging consumer demand for EPS, and efficient homes in general, is still a limiting factor in driving the new construction market further. Outlying rural areas trail the urban areas in efficient building practices and it will continue to take more effort and support from the program to develop those markets. Energy Trust are continuing efforts to recruit additional builders and verifiers.

The report recommends only incremental improvements to the program's systems and processes and some changes are already under way. For instance, good progress has already been made on the recommendation to improve coordination during the measure development process. Another issue for Energy Trust to watch is the impact of high volume builders and verifiers on the program. While these firms are the key to obtaining a larger market share, their actions have proportionately significant impact on the program's budget and quality control processes.

Tab 4

Strategic Planning Committee Meeting

May 10, 2016, 3:00 pm

Attending by teleconference
Mark Kendall, Susan Brodahl, Ken Canon, Lindsey Hardy John Reynolds, JP Batmale

Attending at Energy Trust offices
Fred Gordon, Debbie Menashe, John Volkman

Review of Draft Strategic Planning Retreat Agenda

Staff presented the final agenda for the retreat. Committee members asked staff to ensure that the board is physically situated to facilitate board conversations and interaction. Staff reported on the layout of the room, and the design seems satisfactory.

Committee members also asked that Margie's comments include a status update on the diversity initiative. Committee members also expressed interest in the Energy Trust as Educator paper. The committee looks forward to good discussions throughout.

Committee members asked staff to confirm timing restrictions on nearby parking lots, and Debbie Menashe will follow up to provide more detailed information on parking for the retreat days.

The meeting adjourned before 4:00 pm.

Tab 5

Finance Committee Meeting Notes

May 24, 2016

Attendance

Board members: Dan Enloe (phone), Debbie Kitchin (phone), Susan Brodahl
Staff present: Margie Harris, Mariet Steenkamp, Thad Roth, Marshall Johnson, Cheryle Easton, Pati Presnail

NEEA Heat Pump Water Heater Update

Margie provided background on a heat pump water heater (HPWH) program jointed supported through NEEA, Energy Trust and other regional utilities. To promote the new technology, Energy Trust provided incentives for installation of approximately 400 AirGenerate heat pump water heaters between 2012 and 2015. Energy Trust customers received a $500 Energy Trust Incentive, $1,000 from NEEA, and a $900 tax credit. The overall program resulted in HPWH technology being installed in the region.

A number of units manufactured by AirGenerate had operational problems and some failed. AirGenerate ceased operations in 2015. During the last 12 months, NEEA worked with regional utilities to establish and implement a remediation plan for those customers with malfunctioning AirGenerate units. Remediation funds approved by the NEEA board have now been expended.

Thad and Marshall provided a status update and elements being considered for a continued remediation plan over the next 12 months. Parties agree remediation should remain in place for another year to provide a lower level of assistance to customers whose units have been installed for some time. Discussion addressed board questions.

Tenant Improvements Update

The lease extension approved by the finance committee on March 16, 2016 allows for tenant improvements up to $265,000. Cheryle Easton summarized the scope of the project, including tenant improvements identified and current efforts to secure bids. For those improvements to be pursued, staff hope to have permits in place by the 4th quarter of 2016 with construction ideally to begin in February 2017 and be completed no later than August 2017.

April Financial Statement Review

1. Overall revenue is less than budget by 2.4% or $1,427,579, and an expected rate adjustment for PacifiCorp in June should offset the variance for the remainder of the year. Investment income for the year is significantly higher than budget and have increased the Operational Contingency Pool to just over $4,000,000.

2. Incentives are under budget by $1,572,944 or 8% this year to date, but are exceeding last year actual results by $2,928,585 or 18% with strong results in Existing Homes, New Homes & Products and Solar.

3. All other expenses are $1,761,585 or 7% under budget this year, with variances in program subcontracts, salaries, and professional services.

4. As we are moving through the year, we are moving to higher liquidity in investments, with average days to maturity decreasing from 161 days in February to 117 days in April and a corresponding decrease in return from 0.6% to 0.53%.

Follow-up from Annual Board Strategic Planning Workshop

Mariet engaged the committee about any items from the workshop that the committee would like the Finance team to focus on. Mariet responded to Dan's question about electronic payments and the need for a request for proposal (RFP) for banking services that staff will address payment processing and related banking services required through the incentive processing efficiency work and it will likely be addressed in early 2017. Dan requested additional information on the timing of the expiration of current contract with main financial banking provider to ensure that timing aligns with staff activities.

The next meeting will be August 18, 2016 at 3:30pm

Notes on April 2016 Financial Statements

May 20, 2016

Revenue

We expect PAC revenue to be increased in June, which will eliminate the shortfall.

Revenue through April 2016

Apr-16	YTD Actual	YTD Budget	YTD Var	YTD %	PY
PGE	29,060,793	28,644,587	416,206	1.5%	28,750,230
PAC	18,133,326	19,200,341	(1,067,015)	-5.6%	17,688,342
NWN	9,573,855	10,442,135	(868,280)	-8.3%	9,440,373
CNG	840,659	958,823	(118,164)	-12.3%	732,139
Avista	46,800	-	46,800		-
Investment Income	262,874	100,000	162,874	162.9%	255,836
Total	57,918,308	59,345,886	(1,427,579)	-2.4%	56,866,920

Reserves

Reserves decreased by a small amount this month. We expect reserves to continue to decrease in the latter part of the year.

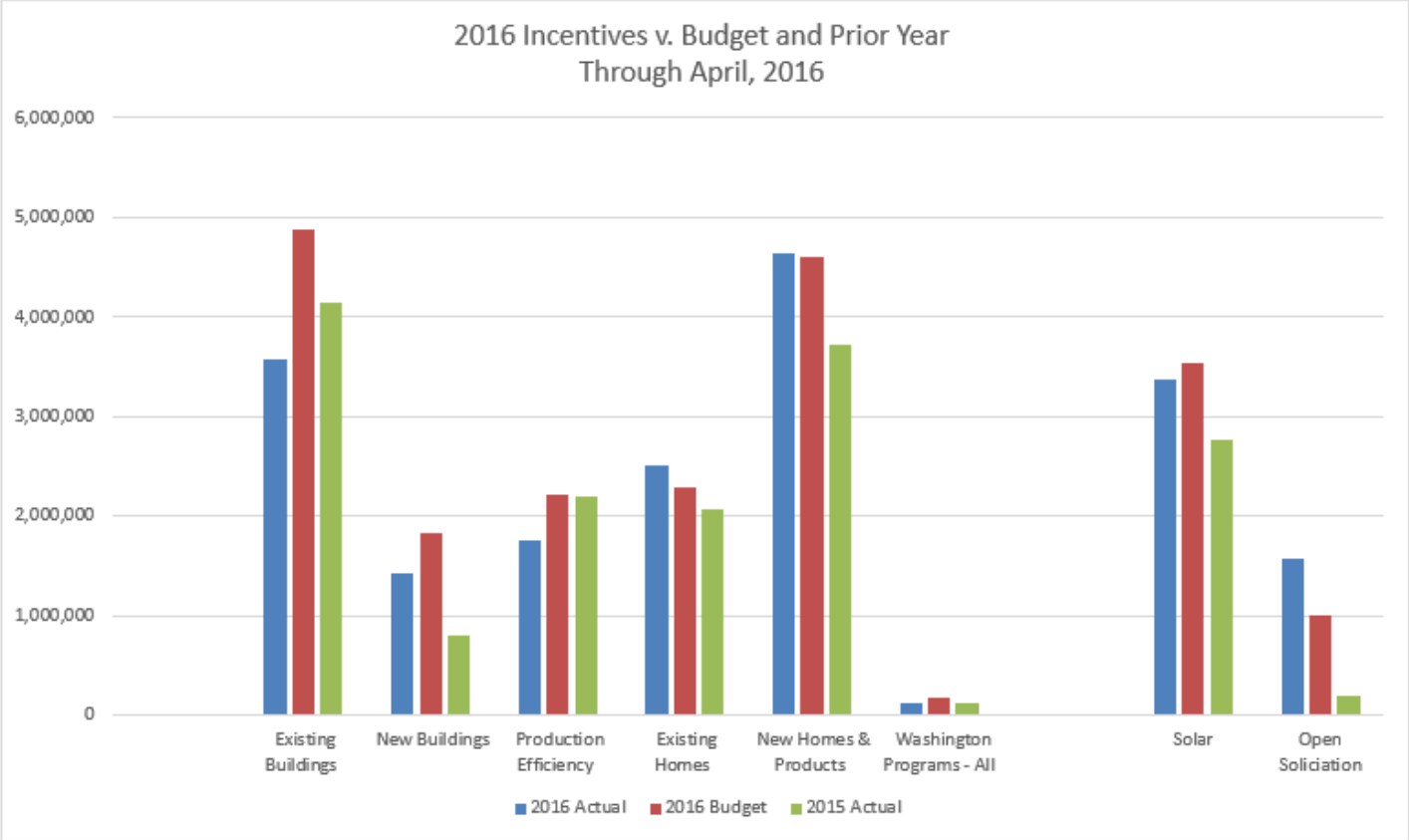
Reserves

	4/30/16 Amount	Actual 12/31/15 Amount	YTD % Change
PGE	30,840,411	23,006,282	34%
PacifiCorp	10,207,570	7,481,735	36%
NW Natural	9,755,626	6,430,002	52%
Cascade	723,852	229,935	215%
Avista	41,907	0	
NWN Industrial	1,733,830	1,032,752	68%
NWN Washington	646,043	257,872	151%
PGE Renewables	8,364,037	10,144,624	-18%
PAC Renewables	11,645,254	10,910,203	7%
Program Reserves	73,958,530	59,493,405	24%
Contingency Reserve	5,000,000	5,000,000	0%
Contingency Available	4,002,759	3,739,885	7%
Total	82,961,292	68,233,284	22%

Incentive Expenses

Total expenses for April were $271 thousand, or 2% below budget because of program subcontracts, incentives, and salaries primarily.

Year to date incentives are below budget by $1.6 million, or 8%, and $2.9 million above the prior year.



Total Incentives
Year-to-Year Comparison

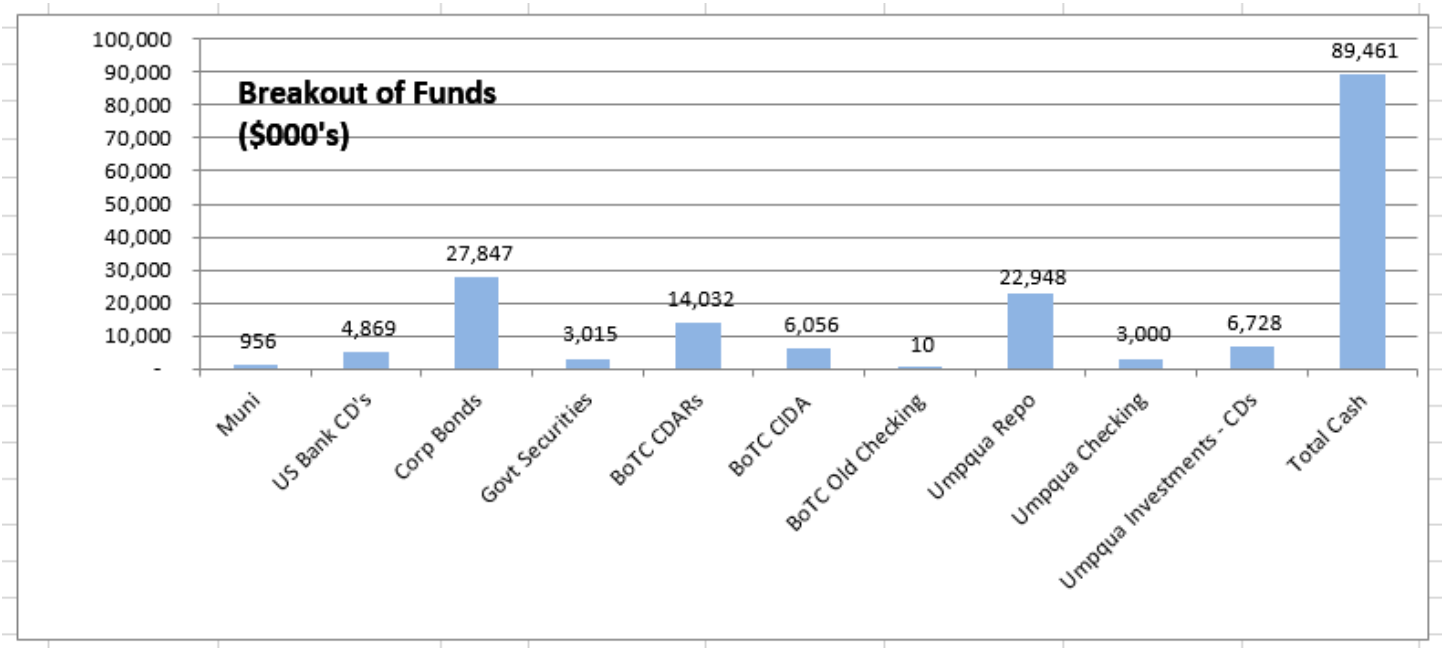
Apr 2016 vs. Apr 2015	Current Year	Prior Year	Variance	Var %
Existing Buildings	3,581,218	4,139,936	558,718	13%
New Buildings	1,425,135	802,596	(622,539)	-78%
Production Efficiency	1,748,737	2,201,913	453,176	21%
Existing Homes	2,507,522	2,075,373	(432,149)	-21%
New Homes & Products	4,630,249	3,716,265	(913,984)	-25%
Washington Programs - All	120,980	118,730	(2,250)	-2%
Solar	3,368,727	2,769,930	(598,797)	-22%
Open Solicitation	1,572,117	201,356	(1,370,760)	-681%
Total Incentives	18,954,684	16,026,099	(2,928,589)	-18%
Energy Efficiency Only	**14,013,840**	**13,054,812**	**(959,028)**	-7%

Total Incentives
Year-to-Date (Prior Year)

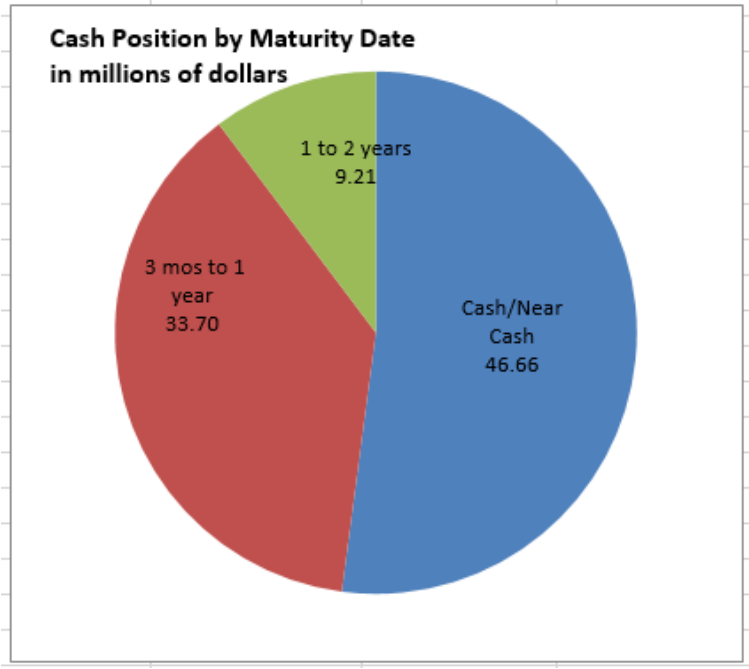
Incentives for April 2015	Actual	Budget	Variance	Var %
Existing Buildings	4,139,936	4,675,876	535,941	11%
New Buildings	802,596	979,636	177,041	18%
Production Efficiency	2,201,913	1,877,215	(324,698)	-17%
Existing Homes	2,075,373	2,680,668	605,295	23%
New Homes & Products	3,716,265	4,974,212	1,257,947	25%
Washington Programs - All	118,730	178,484	59,754	33%
Solar	2,769,930	1,873,533	(896,397)	-48%
Open Soliciation	201,356	1,515,876	1,314,520	87%
Total Incentives	16,026,099	18,755,500	2,729,402	15%
Energy Efficiency Only	**13,054,812**	**15,366,091**	**2,311,279**	**15%**

Investment Status

The graphs below show the type of investments we hold and the locations where our funds are held at the end of April. As items mature, we will continue to invest in relatively short term options.



Average Days to Maturity:	117
Average Portfolio Yield:	0.53%



Energy Trust of Oregon
BALANCE SHEET
April 30, 2016
(Unaudited)

	April 2016	March 2016	December 2015	April 2015	Change from one month ago	Change from Beg. of Year	Change from one year ago
Current Assets							
Cash & Cash Equivalents	32,015,342	31,171,878	27,186,505	39,580,363	843,463	4,828,836	(7,565,021)
Investments	57,303,834	55,824,798	63,884,187	70,779,115	1,479,035	(6,580,353)	(13,475,281)
Receivables	297,637	266,134	374,615	293,088	31,503	(76,978)	4,550
Prepaid Expenses	527,520	616,277	479,349	528,292	(88,758)	48,170	(772)
Advances to Vendors	1,384,182	2,028,909	2,049,018	1,421,882	(644,727)	(664,836)	(37,700)
Total Current Assets	**91,528,514**	**89,907,997**	**93,973,675**	**112,602,740**	**1,620,517**	**(2,445,160)**	**(21,074,225)**
Fixed Assets							
Computer Hardware and Software	3,661,205	3,509,829	3,509,829	3,018,340	151,375.11	151,375.11	642,864
Software Development in Progress	0	151,005	150,148	231,088	(151,005)	(150,148)	(231,088)
Leasehold Improvements	318,964	318,964	318,964	318,964	-	-	-
Office Equipment and Furniture	701,604	701,604	701,604	679,343	-	-	22,260
Total Fixed Assets	**4,681,772**	**4,681,402**	**4,680,545**	**4,247,735**	**370**	**1,228**	**434,037**
Less Depreciation	(2,980,471)	(2,900,417)	(2,672,098)	(2,049,103)	(80,055)	(308,374)	(931,368)
Net Fixed Assets	**1,701,301**	**1,780,985**	**2,008,447**	**2,198,632**	**(79,684)**	**(307,146)**	**(497,331)**
Other Assets							
Deposits	223,339	223,339	132,340	132,340	0	90,999	90,999
Deferred Compensation Asset	760,120	754,460	724,981	663,661	5,660	35,138	96,459
Note Receivable, net of allowance	85,609	85,609	85,609	86,789	-	-	(1,180)
Total Other Assets	**1,069,068**	**1,063,408**	**942,930**	**882,790**	**5,660**	**126,137**	**186,278**
							0
Total Assets	**94,298,883**	**92,752,391**	**96,925,052**	**115,684,162**	**1,546,492**	**(2,626,169)**	**(21,385,279)**
Current Liabilities							
Accounts Payable and Accruals	9,419,632	7,483,167	26,910,003	9,070,130	1,936,465	(17,490,371)	349,502
Salaries, Taxes, & Benefits Payable	854,901	903,349	735,510	782,366	(48,448)	119,391	72,535
Total Current Liabilities	**10,274,533**	**8,386,516**	**27,645,513**	**9,852,496**	**1,888,017**	**(19,258,997)**	**422,037**
Long Term Liabilities							
Deferred Rent	295,843	300,501	314,472	338,578	(4,657)	(18,629)	(42,735)
Deferred Compensation Payable	762,920	757,260	727,781	666,461	5,660	35,138	96,459
Other Long-Term Liabilities	4,290	4,290	3,990	5,540	0	300	(1,250)
Total Long-Term Liabilities	**1,063,052**	**1,062,050**	**1,046,243**	**1,010,579**	**1,002**	**16,810**	**52,474**
Total Liabilities	**11,337,585**	**9,448,566**	**28,691,756**	**10,863,074**	**1,889,019**	**(17,354,171)**	**474,511**
Net Assets							
Unrestricted Net Assets	82,961,298	83,303,824	68,233,296	104,821,087	(342,527)	14,728,002	(21,859,790)
Total Net Assets	**82,961,298**	**83,303,824**	**68,233,296**	**104,821,087**	**(342,527)**	**14,728,002**	**(21,859,790)**
Total Liabilities and Net Assets	**94,298,883**	**92,752,391**	**96,925,052**	**115,684,162**	**1,546,492**	**(2,626,169)**	**(21,385,279)**

Energy Trust of Oregon
Cash Flow Statement-Indirect Method
Monthly 2016

	January	February	March	April	Year to Date
Operating Activities:					
Revenue less Expenses	8,446,762	6,323,151	300,614	(342,524)	$ 14,728,003
Non-cash items:					
Depreciation	76,179	75,997	76,143	80,055	308,374
Change in Reserve on Long Term Note	-	-	-	-	
Loss on disposal of assets					0
Receivables	(0)	18,000	(9,000)	-	9,000
Interest Receivable	14,398	(18,742)	103,825	(31,503)	67,978
Advances to Vendors	626,135	626,136	(1,232,162)	644,727	664,836
Prepaid expenses and other costs	47,275	(241,163)	56,960	88,757	(48,171)
Accounts payable	(17,410,869)	(2,320,614)	303,039	1,936,464	(17,491,980)
Payroll and related accruals	54,950	24,319	119,657	(42,788)	156,138
Deferred rent and other	(15,317)	(20,616)	(98,216)	(10,318)	(144,467)
Cash rec'd from / (used in) Operating Activities	(8,160,486)	4,466,467	(379,140)	2,322,869	$ (1,750,290)
Investing Activities:					
Investment Activity (1)	3,750,021	45,768	4,263,600	(1,479,036)	6,580,353
(Acquisition)/Disposal of Capital Assets	(166)	-	(691)	(370)	(1,061)
Cash rec'd from / (used in) Investing Activities	3,749,855	45,768	4,262,909	(1,479,406)	$ 6,579,126
Cash at beginning of Period	27,186,505	22,775,874	27,288,109	31,171,878	27,186,505
Increase/(Decrease) in Cash	(4,410,631)	4,512,235	3,883,769	843,464	4,828,837
Cash at end of period	$ 22,775,874	$ 27,288,109	$ 31,171,878	$ 32,015,342	$ 32,015,342

(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 2016 - December 2017

	Actual				2016 Adjusted Budget							
	January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Cash In:												
Public purpose and Incr funding	14,818,951	15,914,519	13,829,079	13,092,884	11,500,000	10,900,000	11,800,000	12,600,000	11,900,000	12,000,000	11,700,000	14,300,000
Trsfr from maturing investments	3,750,021	45,768	4,263,600		-	-	-	-	-			5,000,000
Investment Income	110,687	28,809	180,066	11,289	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
From Other Sources		18,000										
Total cash in	18,679,659	16,007,096	18,272,745	13,104,173	11,525,000	10,925,000	11,825,000	12,625,000	11,925,000	12,025,000	11,725,000	19,325,000
Cash Out:	(23,090,291)	(11,494,861)	(14,388,972)	(10,781,678)	(13,300,000)	(15,600,000)	(13,200,000)	(12,600,000)	(15,800,000)	(15,100,000)	(16,400,000)	(21,600,000)
Trsfr to investments				(1,479,036)								
Net cash flow for the month	(4,410,631)	4,512,235	3,883,773	843,459	(1,775,000)	(4,675,000)	(1,375,000)	25,000	(3,875,000)	(3,075,000)	(4,675,000)	(2,275,000)
Beginning Balance: Cash & MM	27,186,505	22,775,874	27,288,109	31,171,882	32,015,342	30,240,342	25,565,342	24,190,342	24,215,342	20,340,342	17,265,342	12,590,342
Ending cash & MM	**22,775,874**	**27,288,109**	**31,171,882**	**32,015,342**	**30,240,342**	**25,565,342**	**24,190,342**	**24,215,342**	**20,340,342**	**17,265,342**	**12,590,342**	**10,315,342**
Future Commitments												
Renewable Incentives	15,000,000	16,800,000	14,900,000	13,400,000	12,300,000	12,000,000	11,100,000	11,500,000	11,800,000	11,800,000	11,800,000	11,800,000
Efficiency Incentives	67,200,000	65,600,000	70,700,000	65,900,000	59,200,000	54,800,000	62,500,000	70,200,000	71,700,000	82,400,000	82,400,000	82,400,000
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	87,200,000	87,400,000	90,600,000	84,300,000	76,500,000	71,800,000	78,600,000	86,700,000	88,500,000	99,200,000	99,200,000	99,200,000

(1) Included in "Ending cash & MM" above

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 2016 - December 2017

	2017 Projected Amounts											
	January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
Cash In:												
Public purpose and Incr funding	19,000,000	18,100,000	14,900,000	15,700,000	12,900,000	12,300,000	13,300,000	14,000,000	13,200,000	13,500,000	13,300,000	16,100,000
Trsfr from maturing investments	12,500,000											
Investment Income	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
From Other Sources												
Total cash in	31,525,000	18,125,000	14,925,000	15,725,000	12,925,000	12,325,000	13,325,000	14,025,000	13,225,000	13,525,000	13,325,000	16,125,000
Cash Out:	(31,400,000)	(10,000,000)	(11,400,000)	(11,200,000)	(13,300,000)	(14,700,000)	(12,200,000)	(12,800,000)	(14,200,000)	(13,100,000)	(15,700,000)	(18,500,000)
Trsfr to investments												
Net cash flow for the month	125,000	8,125,000	3,525,000	4,525,000	(375,000)	(2,375,000)	1,125,000	1,225,000	(975,000)	425,000	(2,375,000)	(2,375,000)
Beginning Balance: Cash & MM	10,315,000	10,440,000	18,565,000	22,090,000	26,615,000	26,240,000	23,865,000	24,990,000	26,215,000	25,240,000	25,665,000	23,290,000
Ending cash & MM	**10,440,000**	**18,565,000**	**22,090,000**	**26,615,000**	**26,240,000**	**23,865,000**	**24,990,000**	**26,215,000**	**25,240,000**	**25,665,000**	**23,290,000**	**20,915,000**
Future Commitments												
Renewable Incentives	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000	11,800,000
Efficiency Incentives	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000	82,400,000
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	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000	99,200,000

(1) Included in "Ending cash & MM" above

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 Budget Comparison
For the Four Months Ending April 30, 2016
(Unaudited)

	April				YTD			
	Actual	**Budget**	**Budget Variance**	**Variance %**	**Actual**	**Budget**	**Budget Variance**	**Variance %**
REVENUES								
Public Purpose Funds-PGE	2,946,802	2,953,003	(6,201)	0%	13,451,407	13,199,745	251,663	2%
Public Purpose Funds-PacifiCorp	2,231,195	2,142,409	88,786	4%	10,226,320	9,623,502	602,819	6%
Public Purpose Funds-NW Natural	1,597,145	1,492,559	104,586	7%	7,795,998	8,499,609	(703,611)	-8%
Public Purpose Funds-Cascade	179,572	161,840	17,732	11%	840,659	958,823	(118,164)	-12%
Public Purpose Funds-Avista	31,200		31,200		46,800		46,800	
Total Public Purpose Funds	**6,985,914**	**6,749,811**	**236,102**	**3%**	**32,361,184**	**32,281,678**	**79,506**	**0%**
Incremental Funds - PGE	3,407,131	3,264,597	142,534	4%	15,609,386	15,444,843	164,543	1%
Incremental Funds - PacifiCorp	1,690,822	1,941,579	(250,757)	-13%	7,907,006	9,576,839	(1,669,833)	-17%
NW Natural - Industrial DSM	1,009,017	1,071,908	(62,891)		1,009,017	1,071,908	(62,891)	-6%
NW Natural - Washington		870,618	(870,618)		768,840	870,618	(101,778)	-12%
Revenue from Investments	42,793	25,000	17,793	71%	262,874	100,000	162,874	163%
TOTAL REVENUE	**13,135,676**	**13,923,512**	**(787,836)**	**-6%**	**57,918,306**	**59,345,885**	**(1,427,579)**	**-2%**
EXPENSES								
Program Subcontracts	4,325,412	4,506,186	180,775	4%	17,038,867	17,642,370	603,502	3%
Incentives	7,160,524	7,232,143	71,619	1%	18,954,684	20,527,628	1,572,944	8%
Salaries and Related Expenses	1,018,132	1,063,743	45,611	4%	3,992,090	4,273,970	281,881	7%
Professional Services	734,194	677,000	(57,195)	-8%	2,280,792	2,988,764	707,972	24%
Supplies	2,184	3,871	1,687	44%	10,605	15,483	4,879	32%
Telephone	5,091	6,267	1,176	19%	19,370	25,067	5,697	23%
Postage and Shipping Expenses	1,432	1,375	(57)	-4%	4,180	5,500	1,319	24%
Occupancy Expenses	53,167	64,278	11,111	17%	212,644	257,111	44,466	17%
Noncapitalized Equip. & Depr.	92,024	117,316	25,293	22%	388,981	457,059	68,078	15%
Call Center	13,997	15,617	1,620	10%	59,698	62,467	2,769	4%
Printing and Publications	79	8,208	8,129	99%	1,022	32,833	31,811	97%
Travel	34,741	16,678	(18,063)	-108%	72,221	63,378	(8,843)	-14%
Conference, Training & Mtng Exp	8,083	21,419	13,336	62%	54,912	86,991	32,079	37%
Interest Expense and Bank Fees		208	208		1,621	833	(788)	-95%
Insurance	8,486	9,167	680	7%	33,941	36,667	2,725	7%
Miscellaneous Expenses	1,096	229	(867)		32,751	917	(31,834)	
Dues, Licenses and Fees	19,564	6,229	(13,334)	-214%	31,924	47,797	15,872	33%
TOTAL EXPENSES	**13,478,203**	**13,749,933**	**271,729**	**2%**	**43,190,305**	**46,524,834**	**3,334,531**	**7%**
TOTAL REVENUE LESS EXPENSES	**(342,527)**	**173,580**	**(516,107)**	**297%**	**14,728,002**	**12,821,051**	**1,906,952**	**-15%**

Energy Trust of Oregon
Income Statement - Actual and Prior Year Comparison
For the Four Months Ending April 30, 2016
(Unaudited)

	April				YTD			
	Actual	Actual Prior Year	Prior Year Variance	Variance %	Actual	Actual Prior Year	Prior Year Variance	Variance %
REVENUES								
Public Purpose Funds-PGE	2,946,802	2,946,152	650	0%	13,451,407	13,169,123	282,284	2%
Public Purpose Funds-PacifiCorp	2,231,195	2,154,831	76,363	4%	10,226,320	9,679,301	547,019	6%
Public Purpose Funds-NW Natural	1,597,145	1,358,438	238,707	18%	7,795,998	7,735,837	60,161	1%
Public Purpose Funds-Cascade	179,572	123,577	55,994	45%	840,659	732,138	108,520	15%
Public Purpose Funds-Avista	31,200		31,200		46,800		46,800	
Total Public Purpose Funds	**6,985,914**	**6,582,999**	**402,914**	**6%**	**32,361,184**	**31,316,399**	**1,044,785**	**3%**
Incremental Funds - PGE	3,407,131	3,293,399	113,732	3%	15,609,386	15,581,107	28,279	0%
Incremental Funds - PacifiCorp	1,690,822	1,623,728	67,094	4%	7,907,006	8,009,041	(102,036)	-1%
NW Natural - Industrial DSM	1,009,017	1,026,144	(17,127)		1,009,017	1,026,144	(17,127)	-2%
NW Natural - Washington		678,392	(678,392)		768,840	678,392	90,448	13%
Revenue from Investments	42,793	61,605	(18,812)	-31%	262,874	255,836	7,038	3%
TOTAL REVENUE	**13,135,676**	**13,266,267**	**(130,590)**	**-1%**	**57,918,306**	**56,866,919**	**1,051,387**	**2%**
EXPENSES								
Program Subcontracts	4,325,412	3,808,641	(516,771)	-14%	17,038,867	16,604,157	(434,710)	-3%
Incentives	7,160,524	6,940,295	(220,229)	-3%	18,954,684	16,026,099	(2,928,585)	-18%
Salaries and Related Expenses	1,018,132	865,334	(152,798)	-18%	3,992,090	3,555,942	(436,147)	-12%
Professional Services	734,194	723,832	(10,362)	-1%	2,280,792	2,247,111	(33,681)	-1%
Supplies	2,184	4,677	2,493	53%	10,605	14,382	3,777	26%
Telephone	5,091	4,889	(201)	-4%	19,370	18,345	(1,025)	-6%
Postage and Shipping Expenses	1,432	827	(605)	-73%	4,180	6,677	2,497	37%
Occupancy Expenses	53,167	54,065	898	2%	212,644	215,058	2,414	1%
Noncapitalized Equip. & Depr.	92,024	99,967	7,943	8%	388,981	343,618	(45,363)	-13%
Call Center	13,997	13,932	(64)	0%	59,698	53,984	(5,714)	-11%
Printing and Publications	79	6,945	6,866	99%	1,022	37,504	36,481	97%
Travel	34,741	7,575	(27,166)	-359%	72,221	32,021	(40,200)	-126%
Conference, Training & Mtng Exp	8,083	13,337	5,254	39%	54,912	52,904	(2,008)	-4%
Interest Expense and Bank Fees		17	17		1,621	1,774	153	9%
Insurance	8,486	8,630	144	2%	33,941	34,519	578	2%
Miscellaneous Expenses	1,096	12	(1,084)		32,751	12	(32,739)	
Dues, Licenses and Fees	19,564	(2,026)	(21,589)	1066%	31,924	28,846	(3,078)	-11%
TOTAL EXPENSES	**13,478,203**	**12,550,949**	**(927,254)**	**-7%**	**43,190,305**	**39,272,953**	**(3,917,351)**	**-10%**
TOTAL REVENUE LESS EXPENSES	**(342,527)**	**715,317**	**(1,057,844)**	**-148%**	**14,728,002**	**17,593,966**	**(2,865,964)**	**-16%**

Energy Trust of Oregon
Statement of Functional Expenses
For the Four Months Ending April 30, 2016
(Unaudited)

	Energy Efficiency	Renewable Energy	Total Program Expenses	Management & General	Communications & Customer Service	Total Admin Expenses	Avista Development	Total	Budget	Variance	% Var
Program Expenses											
Incentives/ Program Management & Delivery	30,911,390	5,082,161	35,993,551				4,893	35,998,444	38,169,998	$ 2,171,554	6%
Payroll and Related Expenses	1,103,471	334,971	1,438,441	756,284	441,080	1,197,364		2,635,806	2,866,931	231,125	8%
Outsourced Services	1,326,717	464,280	1,790,997	91,530	261,249	352,780		2,143,776	2,845,264	701,488	25%
Planning and Evaluation	749,509	24,913	774,423	554		554		774,977	843,972	68,995	8%
Customer Service Management	213,836	28,655	242,491					242,491	167,344	(75,147)	-45%
Trade Allies Network	107,170	7,294	114,464					114,464	119,326	4,862	4%
Total Program Expenses	**34,412,093**	**5,942,275**	**40,354,367**	**848,368**	**702,329**	**1,550,698**	**4,893**	**41,909,958**	**45,012,836**	**3,102,877**	**7%**
Program Support Costs											
Supplies	2,430	813	3,243	3,118	1,441	4,559		7,802	11,324	3,522	31%
Postage and Shipping Expenses	828	277	1,105	1,581	547	2,128		3,233	3,527	294	8%
Telephone	927	310	1,237	513	359	872		2,109	5,749	3,640	63%
Printing and Publications	367	12	379	588	14	602		981	31,593	30,612	97%
Occupancy Expenses	62,207	20,813	83,020	34,399	24,089	58,488		141,508	175,513	34,005	19%
Insurance	9,929	3,322	13,251	5,491	3,845	9,336		22,587	25,030	2,443	10%
Equipment	1,966	658	2,624	1,087	761	1,849		4,473	46,907	42,434	90%
Travel	22,497	6,720	29,217	11,491	18,789	30,280		59,497	51,178	(8,319)	-16%
Meetings, Trainings & Conferences	11,878	4,054	15,932	13,093	6,888	19,981		35,913	67,191	31,278	47%
Interest Expense and Bank Fees				1,621		1,621		1,621	833	(788)	-95%
Depreciation & Amortization	17,090	5,718	22,808	9,450	6,618	16,068		38,876	39,754	878	2%
Dues, Licenses and Fees	19,942	4,747	24,689	2,192	3,418	5,610		30,299	39,583	9,284	23%
Miscellaneous Expenses	31,743	128	31,871	212	230	442		32,313	626	(31,687)	-5062%
IT Services	594,768	78,459	673,227	133,805	92,102	225,907		899,135	1,013,189	114,054	11%
Total Program Support Costs	**776,572**	**126,031**	**902,604**	**218,641**	**159,102**	**377,743**	**0**	**1,280,347**	**1,511,998**	**231,651**	**15%**
TOTAL EXPENSES	**35,188,665**	**6,068,306**	**41,256,971**	**1,067,009**	**861,431**	**1,928,441**	**4,893**	**43,190,305**	**46,524,834**	**3,334,529**	**7%**

OPUC Measure vs. 8% **4.9%**

ENERGY TRUST OF OREGON
Year to Date by Program/Service Territory
For the Four Months Ending April 30, 2016
Unaudited

	ENERGY EFFICIENCY									
	PGE	PacifiCorp	Total	NWN Industrial	NW Natural	Cascade	Avista	Oregon Total	NWN WA	ETO Total
REVENUES										
Public Purpose Funding	$10,426,177	$7,945,135	$18,371,311	$0	$7,795,998	$840,659	$25,200	$27,033,168	$0	$27,033,168
Incremental Funding	15,609,386	7,907,006	23,516,391	1,009,017				24,525,408	768,840	25,294,248
Contributions										
Revenue from Investments										
TOTAL PROGRAM REVENUE	**26,035,562**	**15,852,140**	**41,887,703**	**1,009,017**	**7,795,998**	**840,659**	**25,200**	**51,558,576**	**768,840**	**52,327,416**
EXPENSES										
Program Management (Note 3)	883,490	630,957	1,514,446	42,585	191,952	18,663		1,767,645	34,881	1,802,526
Program Delivery	7,538,992	5,490,975	13,029,969	149,194	1,649,086	159,232		14,987,480	132,134	15,119,614
Incentives	6,969,769	4,925,787	11,895,557	79,012	1,804,930	113,362		13,892,861	120,980	14,013,841
Program Eval & Planning Svcs.	670,679	505,989	1,176,667	11,415	135,079	10,087		1,333,246	22,562	1,355,808
Program Marketing/Outreach	705,953	526,446	1,232,397	4,926	269,704	16,205		1,523,232	13,791	1,537,023
Program Legal Services										
Program Quality Assurance	4,670	2,197	6,867		1,335	92		8,294		8,294
Outsourced Services	131,946	81,297	213,242	717	37,129	2,538		253,627		253,627
Trade Allies & Cust. Svc. Mgmt.	138,494	106,022	244,515	893	62,029	3,364		310,800	10,207	321,007
IT Services	265,828	209,257	475,085	3,710	96,213	6,095		581,103	13,665	594,768
Other Program Expenses - all	78,827	61,224	140,052	1,736	23,294	1,621		166,706	15,451	182,157
TOTAL PROGRAM EXPENSES	**17,388,648**	**12,540,151**	**29,928,797**	**294,188**	**4,270,751**	**331,259**	**-**	**34,824,994**	**363,671**	**35,188,665**
ADMINISTRATIVE COSTS										
Management & General (Notes 1&2)	449,715	324,321	774,033	7,609	110,452	8,567		900,662	9,405	910,067
Communications & Customer Svc (Notes 1&2)	363,070	261,833	624,904	6,142	89,171	6,916		727,133	7,593	734,726
Total Administrative Costs	**812,785**	**586,154**	**1,398,937**	**13,751**	**199,623**	**15,483**	**-**	**1,627,795**	**16,998**	**1,644,793**
TOTAL PROG & ADMIN EXPENSES	**18,201,433**	**13,126,305**	**31,327,734**	**307,939**	**4,470,374**	**346,742**	**-**	**36,452,789**	**380,669**	**36,833,458**
TOTAL REVENUE LESS EXPENSES	**7,834,129**	**2,725,835**	**10,559,969**	**701,078**	**3,325,624**	**493,917**	**25,200**	**15,105,787**	**388,171**	**15,493,958**
NET ASSETS - RESERVES										
Cumulative Carryover at 12/31/15	23,006,283	7,481,737	30,488,020	1,032,752	6,430,003	229,935		38,180,711	257,872	38,438,582
Change in net assets this year	7,834,129	2,725,835	10,559,969	701,078	3,325,624	493,917	25,200	15,105,787	388,171	15,493,958
Ending Net Assets - Reserves	**30,840,412**	**10,207,572**	**41,047,989**	**1,733,830**	**9,755,627**	**723,852**	**25,200**	**53,286,498**	**646,043**	**53,932,540**
Ending Reserve by Category										
Program Reserves (Efficiency and Renewables)	30,840,412	10,207,572	41,047,989	1,733,830	9,755,627	723,852	25,200	53,286,498	646,043	53,932,540
Operational Contingency Pool										
Emergency Contingency Pool										
TOTAL NET ASSETS CUMULATIVE	30,840,412	10,207,572	41,047,989	1,733,830	9,755,627	723,852	25,200	53,286,498	646,043	53,932,540

ENERGY TRUST OF OREGON
Year to Date by Program/Service Territory
For the Four Months Ending April 30, 2016
Unaudited

	RENEWABLE ENERGY					TOTAL			
	PGE	PacifiCorp	Total	Avista Development	Other	All Programs	Approved budget	Change	% Change
REVENUES									
Public Purpose Funding	$3,025,231	$2,281,186	$5,306,416	$21,600	$0	$32,361,184	$32,281,678	$79,506	0%
Incremental Funding						25,294,248	26,964,208	(1,669,960)	-6%
Contributions						0		0	
Revenue from Investments					262,874	262,874	75,000	187,874	250%
TOTAL PROGRAM REVENUE	**3,025,231**	**2,281,186**	**5,306,416**	**21,600**	**262,874**	**57,918,306**	**59,320,886**	**(1,402,580)**	**-2%**
EXPENSES									
Program Management (Note 3)	253,254	81,600	334,853	4,893		2,142,272	2,399,553	257,281	11%
Program Delivery	91,237	50,080	141,317			15,260,931	15,544,847	283,916	2%
Incentives	3,911,837	1,029,007	4,940,844			18,954,685	20,527,628	1,572,943	8%
Program Eval & Planning Svcs.	37,211	11,961	49,172			1,404,980	1,636,203	231,223	14%
Program Marketing/Outreach	77,634	26,985	104,619			1,641,642	2,040,623	398,981	20%
Program Legal Services	1,816	581	2,397			2,397	0		
Program Quality Assurance						8,294	5,556	(2,738)	
Outsourced Services	99,973	233,032	333,006			586,633	747,487	160,854	22%
Trade Allies & Cust. Svc. Mgmt.	27,227	8,722	35,949			356,956	283,338	(73,618)	-26%
IT Services	59,340	19,119	78,459			673,227	777,249	104,022	13%
Other Program Expenses - all	31,685	16,005	47,690			229,847	292,579	62,732	21%
TOTAL PROGRAM EXPENSES	**4,591,214**	**1,477,092**	**6,068,306**	**4,893**	**-**	**41,261,864**	**44,255,063**	**2,993,199**	**7%**
ADMINISTRATIVE COSTS									
Management & General (Notes 1&2)	118,741	38,202	156,941	0		1,067,009	1,214,094	147,085	12%
Communications & Customer Svc (Notes 1&2)	95,863	30,841	126,704	0		861,431	1,055,674	194,243	18%
Total Administrative Costs	**214,604**	**69,043**	**283,645**	**-**		**1,928,441**	**2,269,768**	**341,327**	**15%**
TOTAL PROG & ADMIN EXPENSES	**4,805,818**	**1,546,135**	**6,351,951**	**4,893**		**43,190,305**	**46,524,831**	**3,334,526**	**7%**
TOTAL REVENUE LESS EXPENSES	**(1,780,587)**	**735,051**	**(1,045,535)**	**16,707**	**262,874**	**14,728,002**	**12,821,055**	**1,906,947**	**-15%**
NET ASSETS - RESERVES									
Cumulative Carryover at 12/31/15	10,144,625	10,910,203	21,054,828		8,739,885	68,233,295	65,564,916	2,668,379	4%
Change in net assets this year	(1,780,587)	735,051	(1,045,535)	16,707	262,874	14,728,002	12,821,051	1,906,951	-15%
Ending Net Assets - Reserves	**8,364,038**	**11,645,254**	**20,009,293**	**16,707**	**9,002,759**	**82,961,298**	**78,385,967**	**4,575,331**	**6%**
Ending Reserve by Category									
Program Reserves (Efficiency and Renewables)	8,364,038	11,645,254	20,009,293	16,707		73,958,540			
Operational Contingency Pool					4,002,759	4,002,759			
Emergency Contingency Pool					5,000,000	5,000,000			
TOTAL NET ASSETS CUMULATIVE	8,364,038	11,645,254	20,009,293	16,707	9,002,759	82,961,298	78,385,967	4,575,331	6%

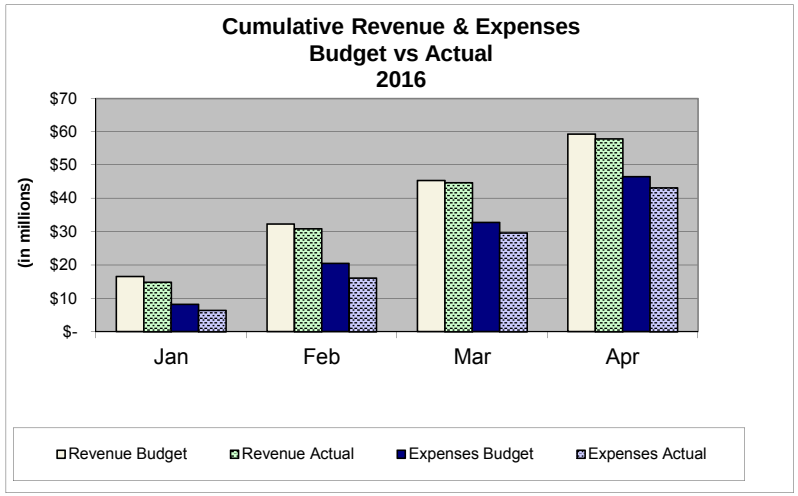
Energy Trust of Oregon
Program Expense by Service Territory
For the Four Months Ending April 30, 2016
(Unaudited)

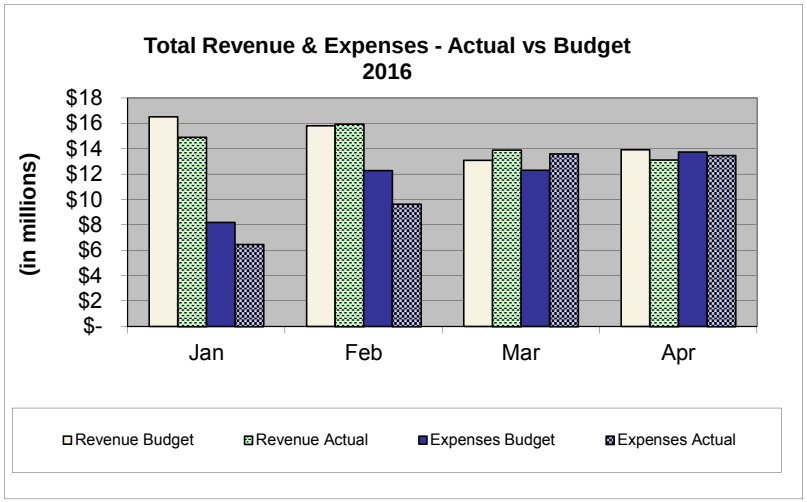
	PGE	Pacific Power	Subtotal Elec.	NWN Industrial	NW Natural Gas	Cascade	Avista	Subtotal Gas	Oregon Total	NWN WA	ETO Total	YTD Budget	Variance	% Var
Energy Efficiency														
Commercial														
Existing Buildings	5,647,310	3,964,711	9,612,021	99,384	761,523	59,660	0	920,567	10,532,588	97,023	10,629,611	12,768,790	2,139,179	17%
New Buildings	1,765,715	1,571,682	3,337,397	5,381	550,710	55,343		611,433	3,948,830		3,948,830	4,550,550	601,720	13%
NEEA	456,742	317,397	774,139		63,421	6,790		70,211	844,350	7,141	851,491	764,682	(86,809)	-11%
Total Commercial	**7,869,767**	**5,853,789**	**13,723,556**	**104,765**	**1,375,654**	**121,793**	**0**	**1,602,212**	**15,325,768**	**104,164**	**15,429,932**	**18,084,022**	**2,654,090**	**15%**
Industrial														
Production Efficiency	3,046,758	2,551,856	5,598,613	203,174	96,310	49,057		348,542	5,947,155		5,947,155	6,994,902	1,047,747	15%
NEEA	72,156	50,142	122,298						122,298		122,298	154,615	32,317	21%
Total Industrial	**3,118,914**	**2,601,997**	**5,720,911**	**203,174**	**96,310**	**49,057**	**0**	**348,542**	**6,069,453**	**0**	**6,069,453**	**7,149,517**	**1,080,064**	**15%**
Residential														
Existing Homes	1,987,113	2,019,649	4,006,762	0	1,543,385	67,261	0	1,610,645	5,617,407	116,410	5,733,817	5,723,347	(10,470)	0%
New Homes/Products	4,365,684	2,053,278	6,418,962	0	1,240,827	85,700	0	1,326,528	7,745,490	135,977	7,881,467	8,233,941	352,474	4%
NEEA	859,948	597,593	1,457,541		214,200	22,932		237,132	1,694,673	24,118	1,718,791	1,516,589	(202,202)	-13%
Total Residential	**7,212,746**	**4,670,520**	**11,883,265**	**0**	**2,998,412**	**175,893**	**0**	**3,174,305**	**15,057,570**	**276,505**	**15,334,075**	**15,473,877**	**139,802**	**1%**
Energy Efficiency Costs	**18,201,427**	**13,126,306**	**31,327,733**	**307,939**	**4,470,376**	**346,743**	**0**	**5,125,058**	**36,452,791**	**380,669**	**36,833,460**	**40,707,416**	**3,873,956**	**10%**
Renewables														
Solar Electric (Photovoltaic)	3,211,706	1,028,660	4,240,366						4,240,366		4,240,366	4,365,561	125,195	3%
Other Renewable	1,594,112	517,475	2,111,587						2,111,587		2,111,587	1,451,858	(659,729)	-45%
Renewables Costs	**4,805,818**	**1,546,135**	**6,351,953**	**0**	**0**	**0**	**0**	**0**	**6,351,953**	**0**	**6,351,953**	**5,817,419**	**(534,534)**	**-9%**
Program Cost Total	**23,007,245**	**14,672,441**	**37,679,686**	**307,939**	**4,470,376**	**346,743**	**0**	**5,125,058**	**42,804,744**	**380,669**	**43,185,412**	**46,524,835**	**3,339,422**	**7%**
Avista Development	**0**	**0**	**0**	**0**	**0**	**0**	**4,893**	**0**	**4,893**	**0**	**4,893**			
Cost Grand Total	**23,007,245**	**14,672,441**	**37,679,686**	**307,939**	**4,470,376**	**346,743**	**4,893**	**5,125,058**	**42,809,637**	**380,669**	**43,190,305**	**46,524,835**	**3,339,422**	**7%**

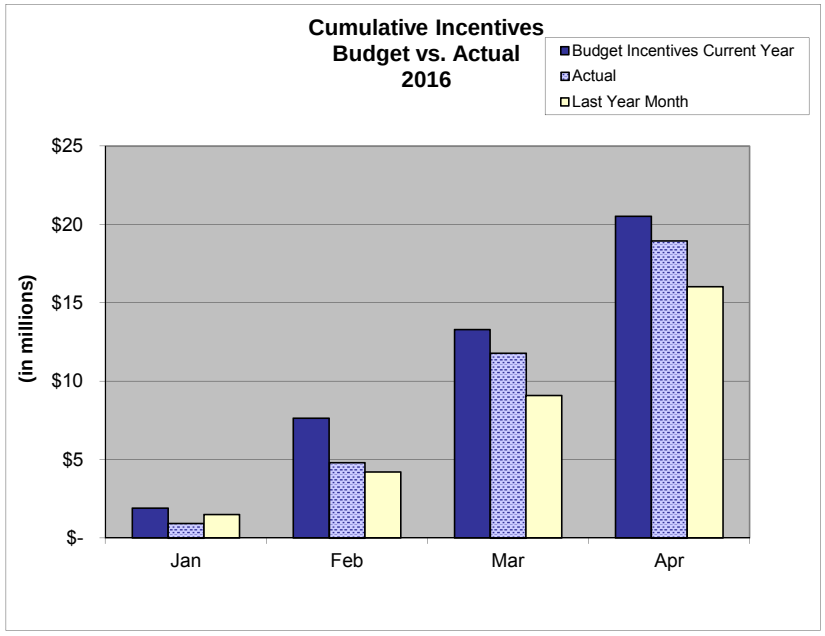
Energy Trust of Oregon
Administrative Expenses
For the 2nd Quarter and Four Months Ending April 30, 2016
(Unaudited)

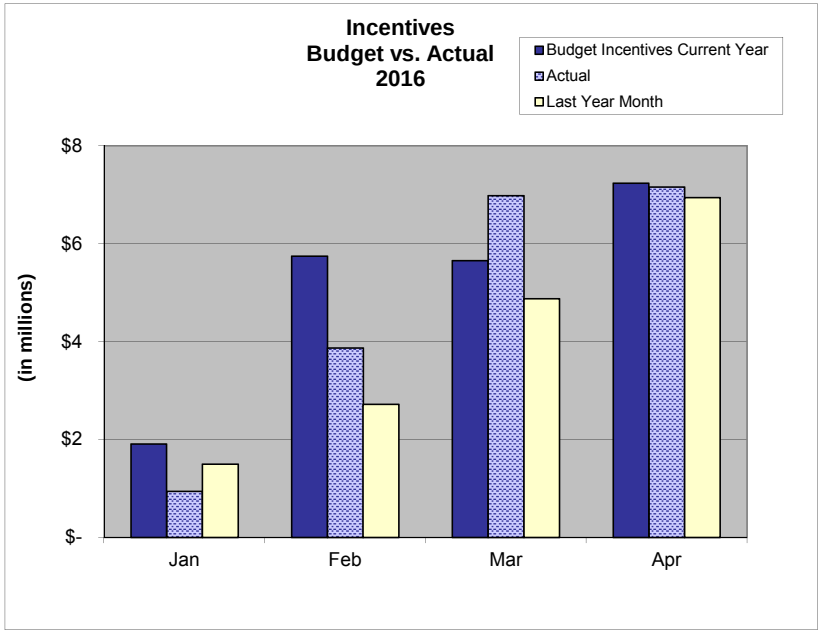
	MANAGEMENT & GENERAL						COMMUNICATIONS & CUSTOMER SERVICE					
	QUARTER			YTD			QUARTER			YTD		
	ACTUAL	BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE
EXPENSES												
Outsourced Services	$12,383	$129,375	$116,992	$90,015	$167,042	$77,026	$66,050	$185,625	$119,575	$261,249	$369,625	$108,376
Legal Services		2,500	2,500	1,515	3,333	1,818						
Salaries and Related Expenses	205,253	579,160	373,907	756,089	767,213	11,124	116,110	387,338	271,228	440,944	516,451	75,507
Supplies	128	1,338	1,210	1,774	1,783	9	180	250	70	500	333	(167)
Postage and Shipping Expenses				1,123		(1,123)	2		(2)	227		(227)
Printing and Publications		1,125	1,125	568	1,500	932		550	550		733	733
Travel	3,152	11,987	8,835	11,491	15,983	4,492	9,907	11,250	1,343	18,789	15,000	(3,789)
Conference, Training & Mtngs	3,031	31,460	28,429	13,093	43,597	30,504	2,063	4,000	1,937	6,888	5,333	(1,555)
Interest Expense and Bank Fees		625	625	1,621	833	(788)						
Miscellaneous Expenses										82		(82)
Dues, Licenses and Fees	1,330	2,175	845	2,192	4,080	1,888	964	4,000	3,036	3,418	5,333	1,915
Shared Allocation (Note 1)	13,608	51,167	37,559	53,168	68,223	15,055	9,165	35,123	25,958	37,233	46,830	9,597
IT Service Allocation (Note 2)	32,495	106,171	73,677	133,805	139,905	6,100	22,367	72,879	50,512	92,102	96,034	3,932
Planning & Eval	151	456	305	554	602	48						
TOTAL EXPENSES	**271,531**	**917,539**	**646,008**	**1,067,009**	**1,214,094**	**147,085**	**226,808**	**701,015**	**474,207**	**861,431**	**1,055,672**	**194,242**

Note 1) Represents allocation of Shared (General Office Management) Costs
Note 2) Represents allocation of Shared IT Costs


Cumulative Revenue & Expenses
Budget vs Actual
2016
(in millions)
$70
$60
$50
$40
$30
$20
$10
$-
Jan
Feb
Mar
Apr
Revenue Budget
Revenue Actual
Expenses Budget
Expenses Actual


Total Revenue & Expenses - Actual vs Budget
2016
(in millions)
$18
$16
$14
$12
$10
$8
$6
$4
$2
$-
Jan
Feb
Mar
Apr
Revenue Budget
Revenue Actual
Expenses Budget
Expenses Actual


Cumulative Incentives
Budget vs. Actual
2016
Budget Incentives Current Year
Actual
Last Year Month
(in millions)
$25
$20
$15
$10
$5
$-
Jan
Feb
Mar
Apr


Incentives
Budget vs. Actual
2016
Budget Incentives Current Year
Actual
Last Year Month
(in millions)
$8
$6
$4
$2
$-
Jan
Feb
Mar
Apr

CONTRACTOR	Description	City	EST COST	Actual TTD	Remaining	Start	End
Administration							
		Administration Total:	**12,680,891**	**3,384,879**	**9,296,012**		
Communications							
		Communications Total:	**3,788,649**	**1,933,682**	**1,854,967**		
Energy Efficiency							
Northwest Energy Efficiency Alliance	Regional EE Initiative Agmt	Portland	33,662,505	9,587,455	24,075,050	1/1/2015	7/1/2020
ICF Resources, LLC	2016 BE PMC	Fairfax	10,380,579	3,125,297	7,255,282	1/1/2016	12/31/2016
CLEAResult Consulting Inc	2016 HES PMC	Austin	6,627,975	1,816,136	4,811,839	1/1/2016	12/31/2016
Northwest Energy Efficiency Alliance	Regional Gas EE Initiative	Portland	6,200,354	757,405	5,442,949	1/1/2015	7/1/2020
CLEAResult Consulting Inc	2016 NBE PMC	Austin	5,868,253	1,886,746	3,981,508	1/1/2016	12/31/2016
Lockheed Martin Corporation	2016 MF PMC	Grand Prairie	4,496,935	1,320,235	3,176,700	1/1/2016	12/31/2018
Ecova Inc	2016 Products PMC	Spokane	3,756,714	1,046,575	2,710,139	1/1/2016	12/31/2016
Energy 350 Inc	PDC - PE 2016	Portland	3,123,000	886,587	2,236,413	1/1/2016	12/31/2016
CLEAResult Consulting Inc	2016 NH PMC	Austin	2,868,582	882,063	1,986,519	1/1/2016	12/31/2016
Intel Corporation	EE Project Incentive Agmt	Hillsboro	2,400,000	0	2,400,000	11/13/2015	12/31/2019
Portland General Electric	PDC - PE 2016	Portland	2,153,000	672,835	1,480,165	1/1/2016	12/31/2016
Northwest Power & Conservation Council	RTF Funding Agreement		1,825,000	647,560	1,177,440	2/25/2015	12/31/2019
Cascade Energy, Inc.	PDC - PE 2016 Small Industrial	Walla Walla	1,674,518	526,009	1,148,509	1/1/2016	12/31/2016
RHT Energy Inc.	PDC - PE 2016	Medford	1,665,000	530,616	1,134,384	1/1/2016	12/31/2016
Evergreen Consulting Group, LLC	PE Lighting PDC 2016	Tigard	1,371,500	439,784	931,716	1/1/2016	12/31/2016
CLEAResult Consulting Inc	PDC - SEM 2016	Austin	1,356,564	280,101	1,076,463	1/1/2016	12/31/2016
HST&V, LLC	PDC - SEM 2016	Portland	1,185,354	376,402	808,952	1/1/2016	12/31/2016
EnergySavvy Inc.	EnergySavvy Online Audit Tool	Seattle	587,500	581,181	6,319	1/1/2012	5/31/2016
Clean Energy Works, Inc.	EE Incentive & Services Agmt	Portland	492,570	398,110	94,460	7/1/2014	12/31/2016
Cascade Energy, Inc.	SEM Curriculum	Walla Walla	464,080	404,080	60,000	5/1/2014	12/31/2016
SBW Consulting, Inc.	PE Program Impact Evaluation	Bellevue	450,000	0	450,000	5/1/2016	4/30/2017
ADM Associates, Inc.	EB 2013/2014 Impact Evaluation	Seattle	422,000	36,871	385,129	1/1/2016	12/31/2016
The Cadmus Group Inc.	PE Impact Eval 2012	Watertown	345,000	345,026	(26)	4/15/2014	6/30/2016
Craft3	SWR Loan Origination/Loss Fund	Portland	305,000	19,169	285,831	6/1/2014	12/31/2016
EnerNoc, Inc.	Commercial SEM curriculum	Boston	300,915	295,556	5,359	6/27/2014	5/30/2016
Craft3	Loan Agreement	Portland	300,000	100,000	200,000	6/1/2014	6/20/2025
CLEAResult Consulting Inc	2016 HES WA PMC	Austin	289,600	81,548	208,052	1/1/2016	12/31/2016
EnergySavvy Inc.	Optix Engage Online Audit Tool	Seattle	273,600	0	273,600	6/1/2016	5/31/2018

Pivotal Energy Solutions LLC	License Agreement	Gilbert	270,500	69,861	200,639	3/1/2014	12/31/2017
KEMA Incorporated	Commercial SEM Impact Eval	Oakland	222,000	193,002	28,998	9/1/2015	7/30/2016
Enervee Corporation	Online Marketplace Development	Venice	212,558	90,650	121,908	1/15/2016	8/30/2016
The Cadmus Group Inc.	PE SEM Impact Evaluation	Watertown	203,300	189,385	13,915	5/1/2015	7/31/2016
ICF Resources, LLC	2016 BE NWN WA PMC	Fairfax	200,724	42,364	158,360	1/1/2016	12/31/2016
Balanced Energy Solutions LLC	New Homes QA Inspections	Portland	154,000	41,980	112,020	4/27/2015	12/31/2016
ICF Resources, LLC	2016 BE DSM PMC	Fairfax	122,019	22,316	99,703	1/1/2016	12/31/2016
Hitachi Consulting Corporation	SOW #18 PMC Transition	Dallas	105,000	56,719	48,281	2/1/2016	7/31/2016
ICF Resources, LLC	OSU CHP Performance Monitoring	Fairfax	100,000	66,118	33,883	7/1/2013	6/30/2016
Pivotal Energy Solutions LLC	EPS New Home dbase construct	Gilbert	89,725	78,250	11,475	7/1/2014	6/30/2016
1000 Broadway Building L.P.	Pay-for-Performance Pilot	Portland	88,125	29,375	58,750	10/17/2014	11/1/2018
Illume Advising, LLC	Existing Homes Process Eval	Verona	84,000	23,576	60,424	2/20/2016	11/30/2016
SBW Consulting, Inc.	Path to Net Zero Impact Eval	Bellevue	75,000	74,150	850	3/19/2015	5/31/2016
Evergreen Economics	EB Process Evaluation	Portland	73,000	38,345	34,655	11/16/2015	9/30/2016
CLEAResult Consulting Inc	Professional Services/Trans	Austin	70,613	41,530	29,083	10/15/2014	10/15/2016
Research Into Action, Inc.	Multifamily Process Evaluation	Portland	64,717	10,083	54,635	3/18/2016	9/15/2016
The Cadmus Group Inc.	Solar PV Impact Evalution	Watertown	53,135	30,758	22,377	10/26/2015	8/30/2016
The Cadmus Group Inc.	Existing Homes Pilot Eval	Watertown	53,000	8,956	44,045	2/18/2016	12/31/2017
PWP, Inc.	EB SBES Process Evaluation	Gaithersburg	50,000	44,215	5,785	9/14/2015	5/31/2016
MetaResource Group	Intel DX1 Mod 1&2 Megaproject	Portland	45,000	12,843	32,157	4/1/2015	5/1/2017
Research Into Action, Inc.	MPower Pilot Evaluation	Portland	43,900	43,011	890	2/1/2015	8/31/2016
Portland General Electric	2016 EE Workshop Sponsorship	Portland	40,000	0	40,000	1/1/2016	12/31/2016
KEMA Incorporated	Billing Analysis Review	Oakland	35,000	0	35,000	3/15/2015	12/31/2016
WegoWise Inc	benchmarking license 2015	Boston	35,000	18,568	16,432	6/15/2014	12/31/2016
Portland State University	Research Plan Development		29,945	0	29,945	2/1/2016	7/31/2016
SBW Consulting, Inc.	HVAC Economic Analysis	Bellevue	28,104	750	27,354	4/27/2016	8/1/2016
Energy Center of Wisconsin	Billing Analysis Review	Madison	25,000	0	25,000	3/15/2015	12/31/2016
Sustainable Northwest	Klamath PAC Ag Program Aware	Portland	24,992	18,762	6,230	11/1/2015	8/10/2016
MetaResource Group	Pay-for-Performance Pilot Eval	Portland	24,000	16,213	7,787	7/1/2015	6/30/2016
Ecotope, Inc.	NB VRF Pilot Evaluation	Seattle	20,000	5,210	14,790	1/1/2016	5/31/2017
MetaResource Group	Paper Plant Impact Evaluation	Portland	20,000	2,553	17,447	10/30/2015	5/30/2016
MetaResource Group	PMC Perf Comp Review	Portland	20,000	0	20,000	2/23/2016	9/30/2016
Sheepscot Creative LLC	SEM Videos	Portland	20,000	8,000	12,000	2/12/2016	8/30/2016
Navigant Consulting Inc	Resid Lighting Market Research	Boulder	19,965	19,965	0	3/8/2016	5/30/2016

Consortium for Energy Efficiency	Membership Dues - 2016		19,392	19,392	0	1/1/2016	12/31/2016
Northwest Food Processors Association	NW Industrial EE Summit 2016	Portland	18,710	18,710	0	1/1/2016	12/31/2016
Clark Public Utilities	Living Wise Kits Coop Agmt	Vancouver	15,000	0	15,000	11/1/2015	12/31/2016
Portland General Electric	Workshop Payment Agreement	Portland	15,000	0	15,000	3/18/2016	12/31/2016
Energy 350 Inc	Professional Services	Portland	14,920	14,920	0	12/10/2014	12/10/2016
Bridgetown Printing Company	January 2016 Bill Insert	Portland	14,677	9,677	5,000	1/1/2016	12/31/2016
BASE zero LLC	Quality Assurance Services	Bend	11,625	2,269	9,356	3/1/2016	12/31/2016
American Council for and Energy Efficient Economy	Intelligent Eff. Baseline		10,000	0	10,000	1/1/2016	12/31/2016
American Council for and Energy Efficient Economy	Smart Buildings		10,000	0	10,000	1/1/2016	12/31/2016
American Council for and Energy Efficient Economy	Small Business EE		10,000	0	10,000	1/1/2016	12/31/2016
Research Into Action, Inc.	Professional Services	Portland	9,590	9,570	20	9/1/2014	8/31/2016
Portland State University	Manufactured Home Decommission		9,020	0	9,020	4/1/2016	6/30/2016
City of Portland Bureau of Planning & Sustainability	Sponsorship - 2016	Portland	8,000	8,000	0	1/1/2016	12/31/2016
Earth Advantage, Inc.	2016 Sponsorship	Portland	7,500	0	7,500	3/1/2016	2/28/2017
Northwest Environmental Business Council	Future Energy Conference 2016	Portland	7,450	3,950	3,500	1/1/2016	12/31/2016
LightTracker, Inc.	CREED Data	Boulder	7,300	7,300	0	8/5/2015	8/4/2016
FMYI, INC	Subscription Agreement	Portland	5,150	5,150	0	4/25/2016	3/1/2017
Social Enterprises Inc.	GoGreen Sponsorship - 2016	Portland	5,000	5,000	0	4/22/2016	12/31/2016
Sustainable Northwest	2015 Sponsorship	Portland	5,000	5,000	0	9/1/2015	9/1/2016
	Energy Efficiency Total:		**97,771,754**	**28,449,792**	**69,321,962**		

Joint Programs

Portland State University	Technology Forecasting		153,808	126,990	26,818	11/7/2011	12/31/2016
E Source Companies LLC	E Source Service Agreement	Boulder	93,750	93,750	0	2/1/2014	1/31/2017
The Cadmus Group Inc.	Evaluation Consultant	Watertown	63,305	63,209	96	6/20/2013	12/31/2016
CoStar Realty Information Inc	Property Data	Baltimore	40,820	31,273	9,547	6/1/2011	5/31/2017
Research Into Action, Inc.	EH Attic Air Sealing Pilot Eva	Portland	30,000	30,000	0	10/8/2014	9/30/2016
Pinnacle Economics Inc	2015 Economic Impact Study	Camas	24,610	15,610	9,000	3/2/2016	6/30/2016
Excidian LLC	Business Finance Class	Wheeling	18,706	0	18,706	5/15/2016	8/1/2016
American Council for and Energy Efficient Economy	ACEEE Conference 2016		10,286	0	10,286	5/9/2016	8/31/2016
Bruins Analysis and Consulting	Fast Feedback Reporting	Bremerton	7,000	3,500	3,500	11/15/2015	4/30/2016
	Joint Programs Total:		**442,285**	**364,332**	**77,953**		

Renewable Energy

Clean Water Services	Project Funding Agreement		3,000,000	1,013,106	1,986,894	11/25/2014	11/25/2039
JC-Biomethane LLC	Biogas Plant Project Funding	Eugene	2,000,000	1,500,000	500,000	10/18/2012	10/18/2032
Steel Bridge Solar, LLC	Project Funding Agreement	Seattle	2,000,000	1,000,000	1,000,000	3/27/2015	12/15/2040

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	750,000	250,000	10/25/2012	10/25/2027
Three Sisters Irrigation District	TSID Hydro	Sisters	1,000,000	900,000	100,000	4/25/2012	9/30/2032
Farmers Irrigation District	FID - Plant 2 Hydro	Hood River	900,000	450,000	450,000	4/1/2014	4/1/2034
Farmers Conservation Alliance	Irrigation Collaboration Initi	Hood River	633,000	516,851	116,149	1/2/2015	12/31/2016
Old Mill Solar, LLC	Project Funding Agmt Bly, OR	Lake Oswego	490,000	0	490,000	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
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	217,830	223,830	10/27/2010	10/27/2025
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
Clean Power Research, LLC	PowerClerk License	Napa	231,253	228,583	2,670	7/1/2014	6/30/2016
Henley KBG, LLC	Henley Proj Dev Assistance	Reno	150,000	43,683	106,318	4/10/2014	12/31/2016
City of Astoria	Bear Creek Funding Agreement	Astoria	143,000	143,000	0	3/24/2014	3/24/2034
Klamath Basin Geopower Inc	Poe Valley Proj Dev Assistance	Reno	112,874	63,000	49,874	4/10/2014	12/31/2016
Gary Higbee DBA WindStream Solar	Solar Verifier Services	Eugene	100,000	85,035	14,965	8/1/2014	7/31/2016
Sunflower Energy Solutions, Inc	Solar Verifier Services	Terrebonne	100,000	12,670	87,330	1/12/2016	7/31/2016
Wallowa Resources Community Solutions, Inc.	Upfront Hydroelectric Project		100,000	39,463	60,538	10/1/2011	10/1/2016
Solar Oregon	2015 Outreach Agreement	Portland	72,800	38,800	34,000	1/1/2015	12/31/2016
Kendrick Business Services LLC	Solar TA Business Consulting	Albany	64,200	38,821	25,379	10/8/2015	12/31/2016
SPS of Oregon Inc	Project Funding Agreement	Wallowa	60,000	0	60,000	10/15/2015	10/31/2036
State of Oregon Dept of Geology & Mineral Industries	Lidar Data	Portland	40,000	40,000	0	11/7/2014	12/1/2016
Clean Energy States Alliance	CESA Membership		39,500	39,500	0	7/1/2015	6/30/2016
Glenna R Wiseman	Solar Marketing Curriculum	Redlands	36,500	33,745	2,755	10/20/2015	7/31/2016
University of Oregon	UO SRML Contribution - 2016	Eugene	24,999	25,000	(1)	3/9/2016	3/8/2017
Wallowa Resources Community Solutions, Inc.	Renewables Field Outreach		24,999	225	24,774	2/1/2016	1/30/2018
Robert Migliori	42kW wind energy system	Newberg	24,125	21,673	2,452	4/11/2007	1/31/2024
Oregon Clean Power Cooperative	Grant Agreement	Corvallis	17,000	17,000	0	6/15/2015	6/30/2016
Oregon Solar Energy Industries Association	Solar Technical Training Class	Portland	13,500	0	13,500	12/10/2015	12/31/2016
Warren Griffin	Griffin Wind Project	Salem	13,150	9,255	3,895	10/1/2005	10/1/2020
Chaolysti	Solar TA Summit	Alameda	11,650	3,000	8,650	12/1/2015	5/30/2016
Oregon Solar Energy Industries Association	Sponsorship 2016	Portland	7,500	7,500	0	1/1/2016	12/31/2016
Clean Energy States Alliance	2016 CESA ITAC Sponsorship		5,000	5,000	0	1/1/2016	12/31/2016

Bonneville Environmental Foundation	REC/WRC Purchase 2016	Portland	2,430	0	2,430	1/1/2016	12/31/2016
		Renewable Energy Total:	**16,456,212**	**10,524,333**	**5,931,879**		
		Grand Total:	**131,139,791**	**44,657,018**	**86,482,773**		

Financial Glossary

(for internal use) - updated May 31, 2016

Administrative Costs

Costs that, by nonprofit accounting standards, have general objectives which enable an organization's programs to function. The organization's programs in turn provide direct services to the organization's constituents and fulfill the mission of the organization (i.e. management and general and general communication and outreach expenses).

I. **Management and General**
- Includes governance/board activities, interest/financing costs, accounting, payroll, human resources, general legal support, and other general organizational management costs.
- Receives an allocated share of indirect costs.

II. **General Communications and Outreach**
- Expenditures of a general nature, conveying the nonprofit mission of the organization and general public awareness.
- Receives an allocated share of indirect costs.

Allocation
- A way of grouping costs together and applying them to a program as one pool based upon an allocation base that most closely represents the activity driver of the costs in the pool.
- Used as an alternative to charging programs on an invoice-by-invoice basis for accounting efficiency purposes.
- An example would be accumulating all of the costs associated with customer management (call center operations, Energy Trust customer service personnel, complaint tracking, etc.). The accumulated costs are then spread to the programs that benefited by using the ratio of calls into the call center by program (i.e. the allocation base).

Allocation Cost Pools
- Employee benefits and taxes.
- Office operations. Includes rent, telephone, utilities, supplies, etc.
- Information Technology (IT) services.
- Planning and evaluation general costs.
- Customer service and trade ally support costs.
- General communications and outreach costs.
- Management and general costs.
- Shared costs for electric utilities.
- Shared costs for gas utilities.
- Shared costs for all utilities.

Auditor's Opinion
- An accountant's or auditor's opinion is a report by an independent CPA presented to the board of directors describing the scope of the examination of the organization's books, and certifying that the financial statements meet the AICPA (American Institute of Certified Public Accountants) requirements of GAAP (generally accepted accounting principles).

- Depending on the audit findings, the opinion can be unmodified or modified regarding specific items. Energy Trust strives for and has achieved in all its years an unmodified opinion.
- An unmodified opinion indicates agreement by the auditors that the financial statements present an accurate assessment of the organization's financial results.
- The OPUC Grant Agreement requires an unmodified opinion regarding Energy Trust's financial statements.
- Failure to follow generally accepted accounting principles (GAAP) can result in a qualified opinion.

Board-approved Annual Budget

- Funds approved by the board for *expenditures* during the budget year (subject to board approved program funding caps and associated policy) for the stated functions.
- Funds approved for *capital* asset expenditures.
- Approval of the general allocation of funds including commitments and cash outlays.
- Approval of expenditures is based on assumed revenues from utilities as forecasted in their annual projections of public purpose collections and/or contracted revenues.

Reserves

- In any one year, the amount by which revenues exceed expenses for that year in a designated category that will be added to the cumulative balance and brought forward for expenditure to the next budget year.
- In any one year, if expenditures exceed revenues, the negative difference is applied against the cumulative carryover balance.
- Does not equal the cash on hand due to noncash expense items such as depreciation.
- Tracked by major utility funder and at high level program area--by EE vs RE, not tracked by program.

Committed Funds

- Represents funds obligated to identified efficiency program participants in the form of signed applications or agreements and tracked in the project forecasting system**.**
- If the project is not demonstrably proceeding within agreed upon time frame, committed funds return to incentive pool. Reapplication would then be required.
- Funds are expensed when the project is completed.
- Funds may be held in the operating cash account, or in escrow accounts.

Contract obligations

- A signed contract for goods or services that creates a legal obligation.
- Reported in the monthly Contract Status Summary Report.

Cost-Effectiveness Calculation

- Programs and measures are evaluated for cost-effectiveness.
- The cost of program savings must be lower than the cost to produce the energy from both a utility and societal perspective.
- Expressed as a ratio of energy savings cost divided by the presumed avoided utility and societal cost of energy.
- Program cost-effectiveness evaluation is "fully allocated," (i.e. includes all of the program costs plus a portion of Energy Trust administrative costs).

Dedicated Funds

- Represents funds obligated to identified renewable program participants in the form of signed applications or agreements and tracked in the project forecasting system.

- May include commitments, escrows, contracts, board designations, master agreements.
- Methodology utilized to develop renewable energy activity-based budgets amounts.

Direct Program Costs

- Can be directly linked to and reflect a causal relationship to one individual program/project; or can easily be allocated to two or more programs based upon usage, cause, or benefit.

Direct Program Evaluation & Planning Services

- Evaluation services for a specific program rather than for a group of programs.
- Costs incurred in evaluating programs and projects and included in determining total program funding caps.
- Planning services for a specific program rather than for a group of programs.
- Costs incurred in planning programs and projects and are included in determining program funding expenditures and caps.
- Evaluation and planning services attributable to a number of programs are recorded in a cost pool and are subsequently allocated to individual programs.

Escrowed Program (Incentive) Funds

- Cash deposited into a separate bank account that will be paid out pursuant to a contractual obligation requiring a certain event or result to occur. Funds can be returned to Energy Trust if such event or result does not occur. Therefore, the funds are still "owned" by Energy Trust and will remain on the balance sheet.
- The funds are within the control of the bank in accordance with the terms of the escrow agreement.
- When the event or result occurs, the funds are considered "earned" and are transferred out of the escrow account ("paid out") and then are reflected as an expense on the income statement for the current period.

Expenditures/Expenses

- Amounts for which there is an obligation for payment of goods and/or services that have been received or earned within the month or year.

Project Tracking Projects Forecasting

Module developed in Project Tracking system (PT) to provide information about the timing of future incentive payments, with the following definitions**:**

- Estimated-Project data may be inaccurate or incomplete. Rough estimate of energy savings, incentives and completion date by project and by service territory.
- Proposed-Project that has received a written incentive offer but no agreement or application has been signed. Energy savings, incentives and completion date to be documented by programs using this phase. For Renewable projects-project that has received Board approval.
- Accepted-Used for renewable energy projects in second round of application; projects that have reached a stage where approval process can begin.
- Committed-Project that has a signed agreement or application reserving incentive dollars until project completion. Energy savings/generations, incentives and completion date by project and by service territory must be documented in project records and in PT. If project not demonstrably proceeding within agreed upon time frame, committed funds return to incentive pool. Reapplication would then be required.
- Dedicated-Renewable project that has been committed, has a signed agreement, and if required, has been approved by the board of directors.

Incentives

I. **Residential Incentives**

- Incentives paid to a residential program participant (party responsible for payment for utility service in particular dwelling unit) exclusively for energy efficiency and renewable energy measures in the homes or apartments of such residential customers.

II. **Business Incentives**

- Incentives paid to a participant other than a residential program participant as defined above following the installation of an energy efficiency or renewable energy measure.
- Above market cost for a particular renewable energy project.

III. **Service Incentives**

- Incentives paid to an installation contractor which serves as a reduction in the final cost to the participant for the installation of an energy efficiency or renewable energy measure.
- Payment for services delivered to participants by contractors such as home reviews and technical analysis studies.
- End-user training, enhancing participant technical knowledge or energy efficiency practices proficiency such as Strategic Energy Management programs, where some level of tracking of particular sites and participants is part of the program design.
- Lighting, hot water, and energy control devices through retailer buy down, on line fulfillment, and direct installation.

Indirect Costs

- Shared costs that are “allocated” for accounting purposes rather than assigning individual charges to programs.
- Allocated to all programs and administration functions based on a standard basis such as hours worked, square footage, customer phone calls, etc.
- Examples include rent/facilities, supplies, computer equipment and support, and depreciation.

IT Support Services

- Information technology costs incurred as a result of supporting all programs.
- Includes energy savings and incentive tracking software, data tracking support of PMCs and for the program evaluation functions.
- Includes technical architecture design and physical infrastructure.
- Receives an allocation of indirect shared costs.
- Total costs subsequently allocated to programs and administrative units.

Outsourced Services

- Miscellaneous professional services contracted to third parties rather than performed by internal staff.
- Can be incurred for program or administrative reasons and will be identified as such.

Program Costs

- Expenditures made to fulfill the purposes or mission for which the organization exists and are authorized through the program approval process.
- Includes program management, incentives, program staff salaries, planning, evaluation, quality assurance, program-specific marketing and other costs incurred solely for program purposes.
- Can be direct or indirect (i.e. allocated based on program usage.)

Program Delivery Expense

- This will include all PMC labor and direct costs associated with: incentive processing, program coordination, program support, trade ally communications, and program delivery contractors.
- Includes contract payments to NEEA for market transformation efforts.
- Includes performance compensation incentives paid to program management contractors under contract agreement if certain incentive goals are met.
- Includes professional services for items such as solar inspections, anemometer maintenance and general renewable energy consulting.

Program Legal Services

- External legal expenditures and internal legal services utilized in the development of a program-specific contract.

Program Management Expense

- PMC billings associated with program contract oversight, program support, staff management, etc.
- ETO program management staff salaries, taxes and benefits.

Program Marketing/Outreach

- PMC labor and direct costs associated with marketing/outreach/awareness efforts to communicate program opportunities and benefits to rate payers/program participants.
- Awareness campaigns and outreach efforts designed to reach participants of individual programs.
- Co-op advertising with trade allies and vendors to promote a particular program benefit to the public.

Program Quality Assurance

- Independent in-house or outsourced services for the quality assurance efforts of a particular program (distinguished from program quality control).

Program Reserves

- Negotiated with utilities annually, with a goal of providing a cushion of approximately 5% above funds needed to fulfill annual budgeted costs. Management may access up to 50% of annual program reserve without prior board approval (resolution 633, 2012).

Program Support Costs

- Source of information is contained in statement of functional expense report.
- Portion of costs in OPUC performance measure for program administration and support costs.
    - Includes expenses incurred directly by the program.
    - Includes allocation of shared and indirect costs incurred in the following categories: supplies; postage and shipping; telephone; printing and publications; occupancy expenses; insurance; equipment; travel; business meetings; conferences and training; depreciation and amortization; dues, licenses,

subscriptions and fees; miscellaneous expense; and an allocation of information technology department cost.

Project Specific Costs (for Renewable Energy)

- Expenses directly related to identified projects or identified customers to assist them in constructing or operating renewable projects. Includes services to prospective as well as current customers.
- Must involve direct contact with the project or customer, individually or in groups, and provide a service the customer would otherwise incur at their own expense.
- Does not include general program costs to reach a broad (unidentified) audience such as websites, advertising, program development, or program management.
- Project-Specific costs may be in the categories of; Incentives, Staff salaries, Program delivery, Legal services, Public relations, Creative services, Professional services, Travel, Business meetings, Telephone, or Escrow account bank fees.

Savings Types

- **Working Savings/Generation:** the estimate of savings/generation that is used for data entry by program personnel as they approve individual projects. They are based on deemed savings/generation for prescriptive measures, and engineering calculations for custom measures. They do not incorporate any evaluation or transmission and distribution factors.
- **Reportable Savings/Generation:** the estimate of savings/generation that will be used for public reporting of Energy Trust results. This includes transmission and distribution factors, evaluation factors, and any other corrections required to the original working values. These values are updated annually, and are subject to revision each year during the "true-up" as a result of new information or identified errors.
- **Contract Savings**: the estimate of savings that will be used to compare against annual contract goals. These savings figures are generally the same as the reportable savings at the time that the contract year started. For purposes of adjusting working savings to arrive at this number, a single adjustment percentage (a SRAF, as defined below) is agreed to at the beginning of the contract year and is applied to all program measures. This is based on the sum of the adjustments between working and reportable numbers in the forecast developed for the program year.
- **Savings Realization Adjustment Factors (SRAF):** are savings realization adjustment factors applied to electric and gas working savings measures in order to reflect more accurate savings information through the benefit of evaluation and other studies. These factors are determined by the Energy Trust and used for annual contract amendments. The factors are determined based on the best available information from:
  - Program evaluations and/or other research that account for free riders, spill-over effects and measure impacts to date; and
  - Published transmission and distribution line loss information resulting from electric measure savings.

Total Program and Admin Expenses (line item on income statement)

- Used only for cost effectiveness calculations, levelized cost calculations and in management reports used to track funds spent/remaining by service territory.
- Includes all costs of the organization--direct, indirect, and an allocation of administration costs to programs.
- Should not be used for external financial reporting (not GAAP).

Total Program Expenses (line item on income statement)

- All indirect costs have been allocated to program costs with the exception of administration (management and general costs and communications & outreach).
- Per the requirements of Generally Accepted Accounting Principles (GAAP) for nonprofits, administrative costs should not be allocated to programs.
- There is no causal relationship—costs would not go away if the program did not exist.

Trade Ally Programs & Customer Service Management

- Costs associated with Energy Trust sponsorship of training and development of a trade ally network for a variety of programs.
- Trade Ally costs are tracked and allocated to programs based on the number of allies associated with that program.
- Costs in support of assisting customers which benefit all Energy Trust programs such as call center operations, customer service manager, complaint handling, etc.
- Customer service costs are tracked and allocated based on # of calls into the call center per month.

True Up

- True-up is a once-a-year process where we take everything we've learned about how much energy programs actually save or generate, and update our reports of historic performance and our software tools for forecasting and analyzing future savings.
- Information incorporated includes improved engineering models of savings (new data factor), anticipated results of future evaluations based on what prior evaluations of similar programs have shown (anticipated evaluation factor), and results from actual evaluations of the program and the year of activity in question (evaluation factor).
- Results are incorporated in the Annual Report (for the year just past) and the True-up Report (for prior years).
- Sometimes the best data on program savings or generation is not available for 2-3 years, especially for market transformation programs. So for some programs, the savings are updated through the annual true-up 2 or 3 times

Tab 6

Policy Committee Meeting

May 12, 2016, 3:30–5:00 pm

Attending by teleconference
Roger Hamilton, Ken Canon, Alan Meyer, John Reynolds

Attending at Energy Trust offices
Fred Gordon, Steve Lacey, Debbie Menashe, Mariet Steenkamp, Peter West

Policies for Review

Policy on Eligibility of Self-Direct Business for Energy Trust Incentives
The "Self-Direct" policy was reviewed by the Policy Committee and amendments approved by the full board at its meeting on February 24, 2016. One of the amendments increased the cap for "modest cost measures" not subject to the self-direct policy from $3,000 to $5,000. The amendments inadvertently left out the revision to increase the reference to modest cost measures in the repayment provision from $3,000 to $5,000. Operationally, the amounts should be the same so that only measures with costs that make them subject to the self-direct policy should also be subject to repayment for noncompliance with the self-direct policy. Staff recommended, and the Policy Committee confirmed, this technical correction. The correction will be made to the policy.

Public Interest Policy
The Public Interest Policy was up for its regular three year review. Staff recommended no changes to the policy at this time. The committee agreed and the policy will be maintained in place and reviewed again at its next regular three year review.

Fuel-Switching Policy
The Fuel-Switching Policy was up for its regular three year review. In May 2013, the board revised the policy in response to then-current program conditions and an OPUC docket requiring addition of specific language to clarify that Energy Trust does not intend its incentives to affect fuel choice. The current policy language is still consistent with program conditions and staff recommended no changes to the policy at this time. The committee agreed and the policy will be maintained in place until its next review.

Annual Review of Report on Contractors Receiving More than $500,000

The Board policy on contract execution provides that "[n]ot less than annually, Staff shall report to the Policy Committee all instances in which Energy Trust has paid more than $500,000 to an individual contractor in a given calendar year." In accordance with this policy, a report was provided to the committee for review. The committee reviewed the report and found no issues.

Brief Updates

Staff provided brief updates to the committee on: Governor Brown's appointment of Lisa Hardie to the Oregon Public Utility Commission, OPUC dockets being tracked by staff, status of work with CLEAResult to provide customer support to customers who had installed faulty heat pump water heaters, and the upcoming Strategic Planning Retreat.

Adjourn

The meeting adjourned before 5:00 pm. The next meeting of the Policy Committee is scheduled for June 23, 2016.

Tab 7

Glossary of Terms Related to Energy Trust of Oregon's Work

Glossary provided to the Energy Trust Board of Directors for general use. Definitions and acronyms are compiled from a variety of resources. Energy Trust policies on topics related to any definitions listed below should be referenced for the most current and comprehensive information. Last updated July 2015.

Above-Market Costs of New Renewable Energy Resources
The portion of the net present value cost of producing power (including fixed and operating costs, delivery, overhead and profit) from a new renewable energy resource that exceeds the market value of an equivalent quantity and distribution (across peak and off-peak periods and seasonally) of power from a nondifferentiated source, with the same term of contract. Energy Trust board policy specifies the methodology for calculating above-market costs. *Reference the Board Cost-Effectiveness Policy and General Methodology*

Aggregate
Combining retail electricity consumers into a buying group for the purchase of electricity and related services. "Aggregator" is an entity that aggregates.

Air Sealing (Infiltration Control)
Conservation measures, such as caulking, efficient windows and weatherstripping, which reduce the amount of cold air entering or warm air escaping a building.

Ampere (Amp)
The unit of measure that tells how much electricity flows through a conductor. It is like using cubic feet per second to measure the flow of water. For example, a 1,200 watt, 120-volt hair dryer pulls 10 amperes of electric current (watts divided by volts).

Anaerobic Digestion
A biochemical process by which organic matter is decomposed by bacteria in the absence of oxygen, producing methane and other byproducts.

Average Megawatt (aMW)
One megawatt of capacity produced continuously over a period of one year. 1 aMW equals 1 megawatt multiplied by the 8,760 hours in a year. 1 aMW equals 8,760 MWh or 8,760,000 kWh.

Avoided Cost
(Regulatory) The amount of money that an electric utility would need to spend for the next increment of electric generation they 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 (QF) gets paid for power sold to the utility.

Base Load
The minimum amount of electric power delivered or required over a given period of time at a steady rate.

Benefit/Cost Ratios
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.

Energy Trust calculates benefit/cost ratios (BCR) on a prospective and retrospective basis. Looking forward, all prescriptive measures and custom projects must have a total resource cost test BCR > 1.0 unless the OPUC has approved an exception. As required in the OPUC grant agreement, Energy Trust reports annually how cost-effective programs were by comparing total costs to benefits, which also need to exceed 1.0.

Biomass
Solid organic wastes from wood, forest or field residues which can be heated to produce energy to power an electric generator.

Biomass Gas
A medium Btu gas containing methane and carbon dioxide, resulting from the action of microorganisms on organic materials such as a landfill.

Blower Door
Home Performance test conducted by a contractor (or energy auditor) to evaluate a home's air tightness. During this test a powerful fan mounts into the frame of an exterior door and pulls air out of the house to lower the inside air pressure. While the fan operates, the contractor can determine the house's air infiltration rate and better identify specific leaks around the house.

British Thermal Unit (Btu)
The standard measure of heat energy. The quantity of heat required to raise the temperature of 1 pound of liquid water by 1 degree Fahrenheit at the temperature at which water has its greatest density (approximately 39 degrees Fahrenheit).

Cogeneration (Combined Heat and Power, CHP)
The sequential production of electricity and useful thermal energy, often by the recovery of reject heat from an electric generating plant for use in industrial processes, space or water heating applications. Conversely, may occur by using reject heat from industrial processes to power an electricity generator. *Reference the Board Combined Heat and Power Policy*

Compact Fluorescent Light Bulbs (CFL)
CFLs combine the efficiency of fluorescent lighting with the convenience of a standard incandescent bulb. There are many styles of compact fluorescent, including exit light fixtures and floodlights (lamps containing reflectors). CFLs are designed for residential uses; they are also used in table lamps, wall sconces, and hall and ceiling fixtures of hotels, motels, hospitals and other types of commercial buildings with residential-type applications.

Conservation
While not specifically defined in the law or OPUC rules on direct access regulation, "conservation" is defined in the OPUC rule 860-027-0310(1)(a) as follows: Conservation means any reduction in electric power or natural gas consumption as the result of increases in efficiency of energy use, production or distribution. Conservation also includes cost-effective fuel switching.

Although fuel switching is part of the definition, this aspect of the rule has not been operationalized as of March 2013.

Cost Effective
Not specifically defined in SB 1149. The OPUC has a definition which refers to a definition from 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. *Reference the Board Cost-Effectiveness Policy and General Methodology*

Cumulative Savings
Sum of the total annual energy savings over a certain time frame while accounting for measure savings "lives." (For example, if a measure is installed for each of two years, the cumulative savings would be the sum of the measure installed in the first year, plus the incremental savings from the savings installed in the second year plus the savings in the second year from the measure installed in the first year.)

Decoupling
A rate provision which reduces or eliminates the degree to which utility profits are driven by the volume of electricity or gas sold. Decoupling is thought by its proponents to reduce utility disincentives to support efficiency. There are many specific variants employed in different states and with different utilities.

Direct Access
The ability of a retail electricity consumer to purchase electricity and certain ancillary services from an entity other than the distribution utility.

Economizer Air
A ducting arrangement and automatic control system that allows a heating, ventilation and air conditioning (HVAC) system to supply up to 100 percent outside air to satisfy cooling demands, even if additional mechanical cooling is required.

Energy Management System (EMS)
A system designed to monitor and control building equipment. An EMS can often be used to monitor energy use in a facility, track the performance of various building systems and control the operations of equipment.

ENERGY STAR®
ENERGY STAR is a joint Environmental Protection Agency and Department of Energy program that encourages energy conservation by improving the energy efficiency of a wide range of consumer and commercial products, enhancing energy efficiency in buildings and promoting energy management planning for businesses and other organizations.

Energy Use Intensity (EUI)
A metric that describes a building's energy use relative to its size. It is the total annual energy consumption (kBtu) divided by the total floor space of the building. EUI varies significantly by building type and by the efficiency of the building.

Enthalpy
Enthalpy is the useful energy or total heat content of a fluid. Ideally, the total enthalpy of a substance is the amount of useful work that substance can do. Enthalpy is used in fluid dynamics and thermodynamics when calculating properties of fluids as they change temperature, pressure and phase (e.g. liquid to liquid-vapor mixture). In HVAC, refrigeration and power cycle processes, enthalpy is used extensively in calculating properties of the refrigerant or working fluid. Additionally, in HVAC applications, enthalpy is used in calculations relating to humidity. An enthalpy economizer is a piece of HVAC equipment that modulates the amount of outdoor air entering into a ventilation system based on outdoor temperature and humidity.

Environmental Protection Agency (EPA)
Founded in 1970, this independent agency was designed to "protect human health and safeguard the natural environment." It regulates a variety of different types of emissions, including greenhouse gases emitted in energy use. It runs several national end-use programs, like ENERGY STAR, SmartWay, Smart Growth programs and green communities programs.

Evaluation
After-the-fact analysis of the effectiveness and results of programs. *Process and Market Evaluations* study the markets to be addressed and the effectiveness of the program strategy, design and implementation. They are used primarily to improve programs. *Impact evaluations* use post-installation data to improve estimates of energy savings and renewable energy generated.

Feed-in Tariff
A renewable energy policy that typically offers a guarantee of payments to project owners for the total amount of renewable electricity they produce, access to the grid and stable, long-term contracts. In Oregon, the pilot program was called the Volumetric Incentive Rate program and each investor-owned utility in the state ran separate programs. Solar systems receiving a feed-in tariff rate were not eligible for Energy Trust incentives or a state tax credit.

Footcandle
A unit of illuminance on a surface that is one foot from a uniform point source of light of one candle and is equal to one lumen per square foot

Free Rider
This evaluation term describes energy efficiency program participants who would have taken the recommended actions on their own, even if the program did not exist. Process evaluations include participant survey questions, which lead to the quantification of the level of free rider impacts on programs that is applied as a discounting factor to Energy Trust reported results.

Geothermal
Useful energy derived from the natural heat of the earth as manifested by hot rocks, hot water, hot brines or steam.

Green Tags (Renewable Energy Certificates or RECs)
See the Renewable Energy Certificates entry.

Gross Savings
Savings that are unadjusted for evaluation factors of free riders, spillover and savings realization rates. Energy Trust reports all savings in net terms, not gross terms, unless otherwise stated in the publication.

Heat Pump
An HVAC system that works as a two-way air conditioner, moving heat outside in the summer and reusing heat from the cold outdoors with an electrical system in the winter. Most systems use forced warm-air delivery systems to move heated air throughout the house.

Heating, Ventilation and Air Conditioning (HVAC)
Mechanical systems that provide thermal comfort and air quality in an indoor space. They are often grouped together because they are generally interconnected. HVAC systems include central air conditioners, heat pumps, furnaces, boilers, rooftop units, chillers and packaged systems.

Hydroelectric Power (Hydropower)
The generation of electricity using falling water to turn turbo-electric generators.

Incremental Annual Savings
Energy savings in one year corresponding to the energy-efficiency measures implemented in that same year.

Incremental Cost
The difference in cost relative to a base case, including equipment and labor cost.

Instant-savings Measure (ISM)
Inexpensive energy-efficiency products installed at no charge, such as CFLs, low-flow showerheads and high-performance faucet aerators. Predominately used by the Existing Homes program and multifamily track to provide homeowners and renters with easy-to-install, energy-saving products.

Integrated Resources Planning (Least-Cost Planning)
A power-planning strategy that takes into account all available and reliable resources to meet current and future loads. This strategy is employed by each of the utilities served by Energy Trust, and for the region's electric system by the Northwest Power and Conservation Council. The term "least-cost" refers to all costs, including capital, labor, fuel, maintenance, decommissioning, known environmental impacts and difficult to quantify ramifications of selecting one resource over another.

Interconnection
For all distributed generation—solar, wind, CHP, fuel cells, etc.—interconnection with the local electric grid provides back-up power and an opportunity to participate in net-metering and sell-back schemes when they are available. It's important to most distributed generation projects to be interconnected with the grid, but adding small generators at spots along an electric grid can produce a number of safety concerns and other operational issues for a utility. Utilities, then, generally work with their state-level regulatory bodies to develop interconnection standards that clearly delineate the manner in which distributed generation systems may be interconnected.

Joule
A unit of work or energy equal to the amount of work done when the point of application of force of 1 newton is displaced 1 meter in the direction of the force. It takes 1,055 joules to equal a Btu. It takes about 1 million joules to make a pot of coffee.

Kilowatt
One thousand (1,000) watts. A unit of measure of the amount of electricity needed to operate given equipment.

Large Customers (with reference to SB 838)
Customers using more than 1 aMW of electricity a year are not required to pay electric conservation charges under SB 838. Additionally, Energy Trust may not provide them with services funded under SB 838 provisions.

Least Cost
The term “least-cost” refers to all costs, including capital, labor, fuel, maintenance, decommissioning, known environmental impacts and difficult to quantify ramifications of selecting one resource over another.

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 the measure.

Local Energy Conservation
Conservation measures, projects or programs that are installed or implemented within the service territory of an electric company.

Low-income Weatherization
Repairs, weatherization and installation of energy-efficient appliances and fixtures for low-income residences for the purpose of enhancing energy efficiency. In Oregon, SB 1149 directs a portion of public purpose funds to Oregon Housing and Community Services to serve low-income customers. Energy Trust coordinates with low-income agencies and refers eligible customers.

Lumen
A measure of the amount of light available from a light source equivalent to the light emitted by one candle.

Lumens/Watt
A measure of the efficacy of a light fixture; the number of lumens output per watt of power consumed.

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. Market transformation is defined in the Oregon Administrative Rules.

Megawatt
The electrical unit of power that equals one million watts (1,000 kW).

Megawatt Hour
One thousand kilowatt hours, or an amount of electrical energy that would power approximately one typical PGE or Pacific Power household for one month. (Based on an average of 11,300 kWh consumed per household per year.)

Methane
A light hydrocarbon that is the main component of natural gas and marsh gas. It is the product of the anaerobic decomposition of organic matter, enteric fermentation in animals and a greenhouse gas.

Monitoring, Targeting and Reporting (MT&R)
A systematic approach to measure and track energy consumption data by establishing a baseline in order to establish reduction targets, identify opportunities for energy savings and report results.

Municipal Solid Waste
Refuse offering the potential for energy recovery. Technically, residential, institutional and commercial discards. Does not include combustible wood by-products included in the term “mill residue.”

Net Metering
An electricity policy for consumers who own (generally small) renewable energy facilities (such as wind, solar power or home fuel cells). "Net," in this context, is used in the sense of meaning "what remains after deductions.” In this case, the deduction of any energy outflows from metered energy inflows. Under net metering, a system owner receives retail credit for at least a portion of the electricity they generate.

Net-to-Gross
Net-to-gross ratios are important in determining the actual energy savings attributable to a particular program, as distinct from energy efficiency occurring naturally (in the absence of a program). The net-to-gross ratio equals the net program load impact divided by the gross program load impact. This factor is applied to gross program savings to determine the program's net impact.

Net Savings
Savings that are adjusted for evaluation factors of free riders, spillover and savings realization rates. Energy Trust reports all savings in net terms, not gross terms, unless otherwise stated in the publication.

Nondifferentiated Source (Undifferentiated Source)
Power available from the wholesale market or delivered to retail customers.

Non-energy Benefit (NEB)
The additional benefits created by an energy-efficiency or renewable energy project beyond the energy savings or production of the project. Non-energy benefits often include water and sewer savings (e.g. clothes washers, dishwashers), improved comfort (e.g. air sealing, windows), sound deadening (e.g. insulation, windows), property value increase (e.g. windows, solar electric), improved health and productivity and enhanced brand.

Oregon Public Utility Commission (OPUC)
Energy Trust operates under a grant agreement with the OPUC and reports quarterly and annually to the state agency. Reports include quarterly presentations to the commission and an annual update on progress to OPUC minimum annual performance measures.

Path to Net Zero (PTNZ)
The Path to Net Zero pilot was launched in 2009 by the New Buildings program to provide increased design, technical assistance, construction, and measurement and reporting incentives to commercial building projects that aimed to achieve exceptional energy performance. The offer demonstrates that a wide range of buildings can achieve aggressive energy goals using currently available construction methods and technology, as well as by testing innovative design strategies.

Photovoltaic
Direct conversion of sunlight to electric energy through the effects of solar radiation on semi-conductor materials. Photovoltaic systems are one type of solar system eligible for Energy Trust incentives.

Program Management Contractor (PMC)
Company Energy Trust contracts 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.

Program Delivery Contractor (PDC)
Company Energy Trust contracts 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.

Public Purpose Charge
Established in SB 1149, the public purpose charge is a 3 percent charge from PGE and Pacific Power Oregon customers. Three fund administrators distribute the ratepayer dollars: Energy Trust of Oregon for energy efficiency, market transformation and renewable energy programs; the Oregon Department of Energy for energy efficiency in schools; and Oregon Housing and Community Services for low-income weatherization and housing assistance. Energy Trust is funded through the public purpose charge (SB 1149), supplemental funding (SB 838) and contracts with two gas utilities.

Public Utility Commissions
State agencies that regulate, among others, investor-owned utilities operating in the state with a protected monopoly to supply power in assigned service territories.

Public Utility Regulatory Act of 1978 (PURPA)
Federal legislation that requires utilities to purchase electricity from qualified independent power producers at a price that reflects what the utilities would have to pay for the construction of new generating resources. The Act was designed to encourage the development of small-scale cogeneration and renewable resources.

Qualifying Facility (QF)
A power production facility that generates its own power using cogeneration, biomass waste, geothermal energy, or renewable resources, such as solar and wind. Under PURPA, a utility is required to purchase power from a QF at a price equal to that which the utility would otherwise pay to another source, or equivalent to the cost if it were to build its own power plant.

Renewable Energy Certificates (RECs or Green Tags)
A Renewable Energy Certificate is a tradable commodity that represents the contractual rights to claim the environmental attributes of a certain quantity of renewable electricity. The environmental attributes include the reductions in emissions of pollutants and greenhouse gases that result from the delivery of the renewably-generated electricity to the grid.

Here's how emission reductions occur: When a renewable energy system generate electricity, the grid operators allow that electricity to flow into the grid because it is less expensive to operate, once it has been built, than generators that burn fossil fuels. But the electricity grid cannot have more electricity flowing into it than is flowing out to electricity users, so the grid operators have to turn down other generators to compensate. They generally turn down those that burn fossil fuels. By forcing the fossil fuel generators to generate less electricity, the renewable energy system causes them to generate fewer emissions of pollutants and greenhouse gases. These reductions in emissions are the primary component of RECs.

RECs were developed as a separate commodity by the energy industry to boost construction of new wind, solar, landfill gas and other renewable energy power plants. RECs allow owners of these power plants to receive the full value of the environmental benefits their plants generate. They also allow consumers to create the same environmental benefits as buying green electricity, or to neutralize the pollution from their consumption of fossil fuels.

RECs are bought and sold every day in the electricity market. They are measured in units, like electricity. Each kilowatt hour of electricity that a renewable energy system produces also creates a one-kilowatt hour REC. *Reference the Board Renewable Energy Certificate Policy*

Renewable Energy Resources
a) Electricity-generation facilities fueled by wind, waste, solar or geothermal power or by low-emission nontoxic biomass based on solid organic fuels from wood, forest and field residues
b) Dedicated energy crops available on a renewable basis
c) Landfill gas and digester gas
d) Hydroelectric facilities located outside protected areas as defined by federal law in effect on July 23, 1999

Renewable Portfolio Standard
A legislative requirement, including in Oregon, for utilities to meet specified percentages of their electric load with renewable resources by specified dates, or a similar requirement. May be referred to as Renewable Energy Standard.

Retrofit
A retrofit involves the installation of new, usually more efficient equipment into an existing building or process prior to the existing equipment's failure or end of its economic life. In buildings, retrofits may involve either structural enhancements to increase strength, or replacing major equipment central to the building's functions, such as HVAC or water heating systems. In

industrial applications, retrofits involve the replacement of functioning equipment with new equipment.

Roof-top Units (RTU)
Packaged heating, ventilating and air conditioning unit that generally provides air conditioning and ventilating services for zones in low-rise buildings. Roof-top units often include a heating section, either resistance electric, heat pump or non-condensing gas (the latter are called “gas-paks”). Roof-top units are the most prevalent comfort conditioning systems for smaller commercial buildings. Generally small (<10 ton) commodity products, but very sophisticated high-efficiency versions are available, as are units larger than 50 tons.

R-Value
A unit of thermal resistance used for comparing insulating values of different material. It is basically a measure of the effectiveness of insulation in stopping heat flow. The higher the R-Value number for a material the greater its insulating properties and the slower the heat flow through it. The specific value needed to insulate a home depends on climate, type of heating system and other factors.

SB 1149
Oregon legislation enacted in 1999 allowing for the creation of a third party, nonprofit organization to receive approximately 74 percent of a 3 percent utility surcharge (public purpose charge) and deliver energy-efficiency and renewable energy programs to the funding Oregon ratepayers of Portland General Electric and Pacific Power. Energy Trust was approved by the OPUC to deliver the services. The rest of the surcharge is distributed to school districts through the Oregon Department of Energy and to low-income customers through Oregon Housing and Community Services. SB 1149 is one stream of funding for Energy Trust, which is also funded through SB 838 to deliver achievable energy efficiency above the 3 percent and identified in utility integrated resource planning processes, and individual contracts with NW Natural and Cascade Natural Gas to deliver natural gas efficiency programs.

SB 838
SB 838, enacted in 2007, augmented Energy Trust’s mission in many ways. It provided a vehicle for additional electric efficiency funding for customers under 1 aMW in load by allowing PGE and Pacific Power to fund cost-effective energy efficiency above the 3 percent, and restructured the renewable energy role to focus on renewable energy systems that are 20 MW or less in size. SB 838 is also the legislation creating the state’s Renewable Portfolio Standard and extended Energy Trust’s sunset year from 2012 to 2026.

SB 838 is often categorized as supplemental funding in Energy Trust budget documents.

Sectors
For energy planning purposes, the economy is divided into four sectors: residential, commercial, industrial and irrigation. At Energy Trust, programs are divided into four sectors: residential, commercial (including multifamily), industrial (including irrigation) and renewable energy.

Self-Directing Consumers
A retail electricity consumer that has used more than one aMW of electricity at any one site in the prior calendar year or an aluminum plant that averages more than 100 aMW of electricity use in the prior calendar year, that has received final certification from the Oregon Department of Energy for expenditures for new energy conservation or new renewable energy resources and that has notified the electric company that it will pay the public purpose charge, net of

credits, directly to the electric company in accordance with the terms of the electric company's tariff regarding public purpose credits.

Solar Power
Using energy from the sun to make electricity through the use of photovoltaic cells.

Solar Thermal
The process of concentrating sunlight on a relatively small area to create the high temperatures needed to vaporize water or other fluids to drive a turbine for generation of electric power.

Spillover
Additional measures that were implemented by the program participant for which the participant did not receive an incentive. They undertook the project on their own, influenced by prior program participation.

Strategic Energy Management (SEM)
A program offering for both commercial and industrial customers: commercial Strategic Energy Management and industrial Strategic Energy Management. Through SEM, customers engage with Energy Trust for a year or more in a systematic and ongoing approach to lowering energy usage. Energy Trust helps customers track and monitor energy use and performance, identify and implement no-cost and low-cost operations and maintenance changes, develop an energy management plan and more. SEM creates culture change around energy, training employees at all levels that energy use can be tracked, reduced and managed.

Therm
One hundred thousand (100,000) British thermal units (1 therm = 100,000 Btu).

Total Resource Cost Test
The OPUC has used the total resource cost (TRC) test as the primary basis for determining conservation cost-effectiveness as determined in Order No. 94-590 (docket UM 551). SB 1149 allows the "self-directing consumers" to use a simple payback of one to 10 years as the cost-effectiveness criterion. This test is central to how Energy Trust delivers on its mission. This test is the main test that determines whether Energy Trust can offer an incentive for a project. It also reflects the region's approach to long-term energy planning by prioritizing investment in low-cost energy resources. *Reference the Board Cost-Effectiveness Policy and General Methodology*

Tidal Energy
Energy captured from tidal movements of water.

Trade Ally Contractor (Trade Ally)
Energy Trust trade allies are valued ambassadors in the field. The network of independent contractors andother allied professionals helps homeowners, businesses, public and nonprofit entities, developers and others complete energy-efficiency and renewable energy projects across Oregon and in southwest Washington. Quite often, trade allies are the first, last and only Energy Trust representative a customer will see.

Trade Ally Network
Energy Trust statewide network of trained contractors and other allied businesses.

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. *Reference the Board Cost-Effectiveness Policy and General Methodology*

U-Value (U-Factor)
A measure of how well heat is transferred by the entire window—the frame, sash and glass—either into or out of the building. U-Value is the opposite of R-Value. The lower the U-Value number, the better the window will keep heat inside a home on a cold day.

Wave Energy
Energy captured by the cyclical movement of waves in the ocean or large bodies of water.

Watt
A unit of measure of electric power at a point in time, as capacity or demand. One watt of power maintained over time is equal to one joule per second.

Wind Power
Harnessing the energy stored in wind via turbines, which then convert the energy into electricity. Mechanical power of wind can also be used directly.

Weatherization
The activity of making a building (generally a residential structure) more energy efficient by reducing air infiltration, improving insulation and taking other actions to reduce the energy consumption required to heat or cool the building. In practice, “weatherization programs” may also include other measures to reduce energy used for water heating, lighting and other end uses.

Acronyms Related to Energy Trust of Oregon's Work

AAMA	American Architectural Manufacturers Association	Trade group for window, door manufacturers
A/C	Air Conditioning	
ACEEE	American Council for an Energy-Efficient Economy	Environmental Advocacy, Researcher
AEE	Association of Energy Engineers	
AEO	Annual Energy Outlook	
AESP	Association of Energy Services Professionals	Energy services and energy efficiency trade organization
AFUE	Annual Fuel Utilization Efficiency	The measure of seasonal or annual efficiency of a furnace or boiler
AIA	American Institute of Architects	Trade organization
AOC	Association of Oregon Counties	
aMW	Average Megawatt	A way to equally distribute annual energy over all the hours in one year; there are 8,760 hours in a year
AOI	Associated Oregon Industries	
APEM	Association of Professional Energy Managers	
ARI	Air-Conditioning and Refrigeration Institute	AC trade association
ASE	Alliance to Save Energy	Environmental advocacy organization
ASERTTI	Association of State Energy Research and Technology Transfer Institutions, Inc.	
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers	Technical (engineers) association
ASME	American Society of Mechanical Engineers	Professional organization
BACT	Best Achievable Control Technology	
BCR	Benefit/Cost ratio	See definition in text
BEF	Bonneville Environmental Foundation	Nonprofit that funds renewable energy projects
BETC	Business Energy Tax Credit	Former Oregon tax credit
BOC	Building Operator Certification	Trains and certifies building operators
BOMA	Building Owners and Managers Association	
BPA	Bonneville Power Administration	Federal power authority
BPS	Bureau of Planning and Sustainability	City of Portland government agency
CAC	Conservation Advisory Council	Energy Trust advisory council to the board
CCS	Communications and Customer Service	A group within Energy Trust
CCCT	Combined Cycle Combustion Turbine	
CEE	Consortium for Energy Efficiency	National energy efficiency group
CEW	Clean Energy Works	
CFL	Compact Fluorescent Light bulb	
CHP	Combined Heat and Power	
CNG	Cascade Natural Gas	Investor-owned utility
ConAug	Conservation Augmentation Program	BPA program

CHT	Coefficient of Heat Transmission (U-Value)	A value that describes the ability of a material to conduct heat. The number of Btu that flow through 1 square foot of material, in one hour. It is the reciprocal of the R-Value (U-Value = 1/R-Value.
COU	Consumer-Owned Utility	
COP	Coefficient of Performance	The ratio of heat output to electrical energy input for a heat pump
CR	CLEAResult	Program Management Contractor for Existing Homes, New Homes and New Buildings
CRM	Customer Relationship Management system	Energy Trust's system to capture information on program participants and non-participants that have communicated with us
CT	Combustion Turbine	
CUB	Citizens' Utility Board of Oregon	Public interest group
Cx	Commissioning	
DG	Distributed Generation	
DSI	Direct Service Industries	Direct Access customers to BPA
DOE	Department of Energy	Federal agency
DSM	Demand Side Management	
EA	Environmental Assessment	
EA	Earth Advantage	
EASA	Electrical Apparatus Service Association	Trade association
ECM	Electrically Commutation Motor	Also known as a variable-speed blower motor, can vary the blower speed in accordance with the needs of the system
EE	Energy Efficiency	
EER	Energy Efficiency Ratio	The cooling capacity of the unit (in Btu/hour) divided by its electrical input (in watts) at standard peak rating conditions
EF	Energy Factor	An efficiency ratio of the energy supplied in heated water divided by the energy input to the water heater
EIA	Energy Information Administration	
EMS	Energy Management System	See definition in text
EPA	Environmental Protection Agency	Federal agency
EPRI	Electric Power Resource Institute	Utility organization
EPS™	Energy Performance Score	Energy Trust rating that assesses a newly built or existing home's energy use, carbon impact and estimated monthly utility costs

EQIP	Environmental Quality Incentive Program	
EREN	Energy Efficiency and Renewable Energy Network	DOE program
ESS	Energy Services Supplier	
EUI	Energy Use Intensity	See definition in text
EWEB	Eugene Water & Electric Board	Utility organization
FCEC	Fair and Clean Energy Coalition	Environmental advocacy organization
FEMP	Federal Energy Management Program	
FERC	Federal Energy Regulatory Commission	Federal regulator
GHG	Greenhouse gas	
GP	Great Plains	Energy Trust's financial tracking system
HBA	Home Builders Association	
HER	Home Energy Review	Online review of a residential customer's home
HSPF	Heating Season Performance Factor	
HVAC	Heating, Ventilation and Air Conditioning	
IBEW	International Brotherhood of Electrical Workers	
ICNU	Industrial Customers of Northwest Utilities	Trade interest group
ICF	ICF International	Existing Buildings Program Management Contractor
IEEE	Institute of Electrical and Electronic Engineers	Professional association
IESNA	Illuminating Engineering Society of America	
IOU	Investor-Owned Utility	
IRP	Integrated Resource Plan	
ISIP	Integrated Solution Implementation Project	
ISM	Instant-Savings Measure	See definition in text
ITC	Investment Tax Credit	Federal
kW	Kilowatt	
kWh	Kilowatt Hours	8,760,000 kWh = 1 aMW
LBL	Lawrence Berkeley Laboratory	
LED	Lighting Emitting Diode	Solid state lighting technology
LEED	Leadership in Energy & Environmental Design	Building rating system from the U.S. Green Building Council
LIHEAP	Low Income Housing Energy Assistance Program	
LIWA	Low Income Weatherization Assistance	
LM	Lockheed Martin	Existing Multifamily Program Management Contractor
LOC	League of Oregon Cities	Local government organization
MEEA	Midwest Energy Efficiency Alliance	Midwest Market Transformation organization, Alliance counterpart
MT&R	Monitoring, Targeting and Reporting	See definition in text
MW	Megawatt	Unit of electric power equal to one thousand kilowatts

MWh	Megawatt Hour	Unit of electric energy, which is equivalent to one megawatt of power used for one hour
NAHB	National Association of Home Builders	Trade association
NCBC	National Conference on Building Commissioning	
NEB	Non-Energy Benefit	See definition in text
NEEA	Northwest Energy Efficiency Alliance	
NEEC	Northwest Energy Efficiency Council	Trade organization
NEEI	Northwest Energy Education Institute	Training organization
NEEP	Northeast Energy Efficiency Partnership	Northwest market transformation organization
NEMA	National Electrical Manufacturer's Association	Trade organization
NERC	North American Electricity Reliability Council	
NFRC	National Fenestration Rating Council	
NRC	National Regulatory Council	Federal regulator
NRCS	Natural Resources Conservation Service	
NRDC	Natural Resources Defense Council	
NREL	National Renewable Energy Lab	
NRTA	Northwest Regional Transmission Authority	
NWEC	Northwest Energy Coalition	Environmental advocacy organization
NWBOA	Northwest Building Operators Association	Trade organization
NWFPA	Northwest Food Processors Association	Trade organization
NWN	NW Natural	Investor-owned utility
NWPPA	Northwest Public Power Association	Trade organization
NWPCC	Northwest Power and Conservation Council	Regional energy planning organization, "the council"
NYSERDA	New York State Energy Research & Development Authority	New York energy efficiency and renewable energy organization funded by a systems benefit charge
OBA	Oregon Business Association	Business lobby group
OEFSC	Oregon Energy Facility Siting Council	Authority to site energy facilities in Oregon
ODOE	Oregon Department of Energy	Oregon state energy agency and one of three public purpose charge administrators
OHCS	Oregon Housing and Community Services	One of three public purpose charge administrator
OPUC	Oregon Public Utility Commission	
OPUDA	Oregon Public Utility District Association	Utility trade organization
OPEC	Organization of Petroleum Exporting Countries	
ORECA	Oregon Rural Electric Cooperative Association	Utility trade organization
OSEIA	Solar Energy Industries Association of Oregon	Volunteer nonprofit organization dedicated to education/promotion
P&E	Planning and Evaluation	A group within Energy Trust
PAC	Pacific Power	

PDC	Program Delivery Contractor	Company contracted with Energy Trust to identify and deliver industrial and agricultural services, and commercial Strategic Energy Management services, to Energy Trust customers
PECI	Portland Energy Conservation, Inc.	Portland nonprofit; former Energy Trust PMC
PGE	Portland General Electric	Investor-owned utility
PG&E	Pacific Gas & Electric	California investor-owned utility
PMC	Program Management Contractor	Company contracted with Energy Trust to deliver a program
PNUCC	Pacific Northwest Utilities Conference Committee	
PPC	Public Power Council	National trade group
PPL	Pacific Power	Formerly Pacific Power and Light
PSE	Puget Sound Energy	Investor-owned utility
PT	Project Tracking	Energy Trust's database that tracks details on customer projects
PTC	Production Tax Credit	Federal incentive that provides financial support for the first 10 years of a renewable energy facility's operation
PTCS	Performance Tested Comfort Systems	Promotes the efficiency of air-systems in residential homes
PTNZ	Path to Net Zero	See definition in text
PUC	Public Utility Commission	
PUD	Public Utility District	
PURPA	Public Utility Regulatory Policies Act	See definition in text
QF	Qualifying Facility	
RAC	Renewable Energy Advisory Council	Energy Trust advisory council to the board
RE	Renewable Energy	
REIT	Real Estate Investment Trust	
RETC	Residential Energy Tax Credit	Oregon tax credit
RFI	Request for Information	
RFP	Request for Proposal	
RFQ	Request for Qualification	
RNW	Renewable Northwest	Renewable energy advocacy group
RSES	Refrigeration Service Engineers Society	Trade association
RTF	Regional Technical Forum	BPA funded research group
RTU	Rooftop HVAC Unit Tune Up	Rooftop HVAC unit tune up
SCCT	Single Cycle Combustion Turbine	
SCL	Seattle City Light	Public utility
SEED	State Energy Efficient Design	Established in 1991, requires all state facilities to exceed the Oregon Energy Code by 20 percent or more

SEER	Seasonal Energy Efficiency Ratio	A measure of cooling efficiency for air conditioners; the higher the SEER, the more energy efficient the unit
SIS	Scientific Irrigation Scheduling	Agricultural information program
SNOPUD	Snohomish Public Utility District	Washington State PUD
SEIA	Solar Energy Industries Association	Volunteer nonprofit organization dedicated to education/promotion
SWEEP	Southwest Energy Efficiency Partnership	Southwest market transformation group
T&D	Transmission & Distribution	
TRC	Total Resource Cost	See definition in text
U-Value		The reciprocal of R-Value; the lower the number, the greater the heat transfer resistance (insulating) characteristics of the material
USGBC	U.S. Green Building Council	Sustainability advocacy organization responsible for LEED
VFD	Variable Frequency Drive	An electronic control to adjust motion
WUTC	Washington Utilities and Transportation Commission	
Wx	Weatherization	
W	Watt	