

# **Energy Trust Board of Directors**

October 17, 2018



## **160th Board Meeting**

Wednesday, October 17, 2018 421 SW Oak Street, Suite 300, Portland, Oregon

	Agenda	Tab	Purpose
10:30 a.m.	Board Meeting—Call to Order (Roger Hamilton)		
	Approve agenda		
	General Public Comment		
	The president may deler specific public comment to the appropriate agenda topic.		
	<b>Consent Agenda</b> R849 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.	1	Action
	• July 25 <sup>th</sup> , 2018 Board meeting minutes R850		
	<ul> <li>Balanced Competition Policy Revision (Roger Hamilton) R851</li> <li>Board Committee Assignments R852</li> </ul>		
10:35 a.m.	President's Report (Roger Hamilton)		
	President's Remarks	0	Info A stiers
	Introduction of new board members R853	Z	Action
10:50 a.m.	Staff Report (Mike Colgrove)		
	<ul> <li>Community Solar Award</li> <li>Budget &amp; Organization Review Implementation Planning undate</li> </ul>		Info Info
	- Budget a Organization Review implementation rialining aparte		
11:00 a.m.	Energy Programs	2	Action
	WES Tri-City Cogeneration Project (Dave Moldal) R 854	3	
11:25 a.m.	Committee Reports and Advisory Council Reports		
	Audit Committee (Anne Root)     Compensation Committee (Melissa Cribbins)	4 5	Info
	Evaluation Committee (Lindsey Hardy)	6	Info
	Finance Committee (Susan Brodahl)	7	Info
	Policy Committee (Alan Meyer)     Strategic Planning Committee (Mark Kendall)	8 9	Info Info
	<ul> <li>Conservation Advisory Council (Lindsey Hardy, Alan Meyer)</li> </ul>	10	Info
	Renewable Advisory Council (Alan Meyer, Ernesto Fonseca)	11	Info
12:00 noon.	Adjourn Board Meeting and Lunch		
1:00 p.m.	Public Budget Presentation and Workshop		

- Welcome and introduction
- Budget presentation
- Workshop
- 4:00 p.m. **Close**

The next meeting of the Energy Trust Board of Directors will be <u>Wednesday, November 14th, 2018</u> at 10:30 a.m. at Energy Trust of Oregon, 421 SW Oak, Suite 300, Portland, OR 97204

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# Tab 1



# **Board Meeting Minutes—159th Meeting**

July 25<sup>th</sup>, 2018

**Board members present**: Susan Brodahl (attending by phone), Ernesto Fonseca, Melissa Cribbins, Roger Hamilton, Lindsey Hardy, Mark Kendall, Debbie Kitchin (attending in Portland), Alan Meyer, Eddie Sherman (attending in Portland), Janine Benner (ODOE ex officio)

Board members absent: Steve Bloom (Oregon Public Utility Commission ex officio), Anne Root

#### Staff attending:

In Klamath Falls: Michael Colgrove, Shelly Carlton, Sue Fletcher, Karen Chase, Peter West, Debbie Menashe, Alex Polley

In Portland: Becky Rein, Auric Armstrong, Quinn Cherf, Lindsey Dierksen, Mike Bailey, Erika Kociolek, Sarah Castor, Tara Crookshank, Amber Cole, Phil Degens, Becky Engel, Fred Gordon, Steve Lacey, Amanda Potter, Mark Wyman

#### Others attending:

In Klamath Falls: Scott Scheuneman (RHT Energy), Ross Finney (RHT Energy), Amber Peavyhouse (Oregon Energy Green), Angalee O'Connor (RHT Energy), Ben Reher (Evergreen Consulting), Greg Henderson (Southern Oregon Business Magazine), Gary Kuleck (OIT), Brain Fox (OIT), Dr. Mason Terry (OIT), Dr. Nagi Naganathan (OIT), Kari Greer (Pacific Power), Todd Andres (Pacific Power), Amie McAulifee (Lost River Booster Club), Kelly Morris (Klamath County)

In Portland: Brian Miller (PGE), Rob Morton (Cascade Energy), Beth Glynn (Cascade Energy), Erik Holman (Cascade Energy), Mike Christianson (Energy 350), Chris Smith (Energy 350)

By phone: Anna Kim (OPUC), Desiree Sideroff (Craft3), Jeff Harris (NEEA), Sam Walker (Stillwater Energy), Callie Lawson (Craft3). There were several additional participants by phone, however they were not identified by name on the phone log.

## Welcome and Introduction

Roger Hamilton called the meeting to order at 10:03.

Roger let the attendees know that the meeting was being broadcast to the Portland office and board members, staff and the public are attending by phone and at both locations. Board members introduced themselves and provided background on their work and experience on the board. Roger described his connection to the area and Oregon Tech, including his family ranch in the area, past role as a county commissioner in Klamath County for eight years, and time spent teaching at Oregon Tech. He expressed positive regard for the area, university and the people who live here as well as its rich history and unique geology.

# **Oregon Institute of Technology Welcome and Opening Remarks**

Oregon Institute of Technology (Oregon Tech) President Nagi G. Naganathan (Dr. Nagi) welcomed the board. He introduced his colleagues at Oregon Tech in the audience: Gary Kuleck (provost and president for academic affairs), Brian Fox (vice president for finance and administration), and Dr. Mason Terry (director of Oregon Renewable Energy Center).

Dr. Nagi said that he joined Oregon Tech in 2017 impressed by the great assets of the school. He described several initiatives underway at the university including research to understand awareness of Oregon Tech and student perceptions. Dr. Nagi said that there is opportunity to increase awareness of the university and the full range of degrees offered, and that student satisfaction and results are very

positive. Over the next 10 years, Dr. Nagi said that he would like Oregon Tech to be a globally recognized polytechnic. He wants Oregon Tech to be the university of choice for distinctive professionals, students and employers within the industry.

Dr. Nagi described the history of the campus as related to renewable energy, including geothermal, first observed by snow melting more quickly on this location. He said that Oregon Tech offered the first Bachelor of Science degree in renewable energy engineering in the nation. He also highlighted the Oregon Renewable Energy Center on campus, funded for the first time last year. Dr. Nagi would like Oregon Tech to be among the top three picks for students interested in becoming energy professionals. There have been 300 graduates in renewable energy engineering since 2005.

The university continues to grow and a new \$54 million building is under construction. During construction, this project will create 300 jobs in the community. The building will include a maker's space, and the university will invite businesses and the community inside. Dr. Nagi hopes that Energy Trust staff will attend the dedication in the not-too-distant future.

Dr. Nagi encouraged attendees to spread the word about Oregon Tech and closed by thanking the board for coming to Oregon Tech and wished members a productive meeting.

The board asked whether student housing is on campus. Brian Fox said that there are two dorms and most freshman live on campus.

The board took a break from 10:36 to 10:46.

## **Board Meeting – Call to Order**

Roger Hamilton called the meeting back to order at 10:46. This is the 159th board meeting going back to 2003. Roger reviewed the agenda.

Eddie Sherman joined board meeting at 10:45.

Melissa moved to approve the agenda and Lindsey seconded the motion. All approved. Roger mentioned that the board strategic planning topic may be shortened to stay on schedule.

## **General Public Comment**

Roger invited public comment. There was no public comment at this time.

## **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

Alan Meyer voted to approve the agenda and Melissa Cribbins seconded. All in favor.

Consent agenda includes:

- 1. May 17 18 2018, Strategic Planning Workshop meeting minutes
- 2. June 6, 2018, Board meeting minutes
- 3. Committee assignments—R843

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

#### WHEREAS:

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

It is therefore RESOLVED:

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

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

Board Committee Assignments—R843

July 25, 2018

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

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

Moved by: Alan Meyer Seconded by: Lindsey Hardy Vote:

In favor: 8

Abstained: 0

# **President's Report**

Roger Hamilton thanked OIT and provided background on Energy Trust results and benefits over time, including 700,000 sites served, 13,000 clean energy systems, \$7.6 billion in bill savings, and 22.8 million tons of carbon dioxide avoided. He described local examples that we are proud of such as at OIT and Sky Lakes Medical Center. Roger provided a map of Energy Trust supported projects in Klamath and Lake Counties. In Klamath County, results have included 11,000 total customer sites served and 191 renewable power systems supported.

# Staff Report

#### **Business Planning Process**

Mike reported that the management team has been working with 1961 Consulting for 2020-2024 strategic planning. He provided an overview of the business planning process conducted with directors and staff—assessing hours needed for work deemed business-as-usual and new initiatives where discrete projects were proposed.

The board asked for examples of new initiatives and whether we have the appropriate level of resources to do business-as-usual work. Mike pointed out that there is additional capacity, but not enough to take on all the new ideas. The exercise showed that we were 12 percent over capacity. Mike provided examples of proposed new initiatives eliminated from the business plan, including a brand refresh and a SharePoint online record retention project. Other examples of reduced business-as-usual work included: board and advisory council notes, multiday visits by Mike around Oregon, and an industrial program scoping tool.

Mike covered the organizational goals—characterized as outcomes—which emerged from business planning. He provided examples of initiatives falling under those goals. He noted that the management team will take a careful look at all new activities. Mike described it as an interesting learning process that allowed the management team to have conversations as a group and have greater insight and clarity on the other groups' work.

The board commented that it appeared to be a good process and asked whether staff thought it was a good and accurate reflection of the work. The board also wondered whether 1961 Consulting gave guidance on the appropriate level of detail. Mike said that the organization tends to prefer more detail and so went further into detail than normally recommended this first time.

The board asked if activities were attached to goals and Mike responded yes—the business-as-usual items were nested under these goals. Goals will likely be used as a guide for new initiatives next year.

The board appreciated that Energy Trust is a learning organization, looking at how we do the work and remaining relevant by focusing on what we need, could and want to do.

The board probed whether this exercise told us that the strategic planning process is working. Mike said yes, and that we will need metrics and targets for each of the six outcomes.

The board wondered if the elimination in travel would impact whether Mike attends the trade ally forums. Mike said he will still have other travel, like trade ally forums, and combine that travel with visits to customers in the area.

#### High Bay Lighting Update

Mike reported that savings from commercial and industrial lighting is off to a strong start, and the Industrial program is planning to pause its "Performance Plus" program and manage incentives a little differently to keep from going too far over budget. Existing Buildings and Multifamily are near or just below goal for lighting savings.

The board asked whether lighting design would be paused, and Peter said no. The board brought up an issue of continuing with customers who are already committed to a lighting project, and Peter offered assurance that any customers already in the project development process will be able to finish and receive our incentives.

The board wondered what staff learned from these strong results in the industrial sector, and Peter responded that it was partially due to a few high-performing trade allies.

#### Secretary of State Audit

Mike stated that the Secretary of State issued its findings in June, and staff appreciated this opportunity to show how we manage costs. The Secretary of State's auditing process took over a year, and the report determined that Energy Trust administrative costs were reasonable and Oregon Public Utility Commission oversight of Energy Trust was appropriate. The audit found that Energy Trust consistently spends below our cap for administrative costs and processes are sound. Staff appreciated this acknowledgement. The three recommendations in the audit report will be implemented through January.

The board congratulated staff and noted this positive outcome is unusual given Oregon state agency audits in recent years.

The board asked who paid for the audit. Mike responded that we did not pay for the Secretary of State staff's time, and the board commented that state agencies are normally asked to pay.

#### Executive Assistant Transition

Mike pointed out that this was the last day for his executive assistant, and explained some staffing transitions regarding board support. Elizabeth Fox is now responsible for office management, allowing Cheryle Easton to do board management work and strategic planning project management. This essentially creates a "board liaison position. The human resources team has posted a senior administrative assistant position to support Mike and management team.

# Strategic Planning Update

Committee chair Mark Kendall and staff liaison Debbie Menashe covered this topic. Mark stated that the retreat was a good opportunity to kick off the plan. Next steps are developing a draft plan in late spring, holding outreach on the draft over the summer, and working to a final plan in October 2019.

Debbie stated that the team has been developing a work plan, and calendar invites will go out soon for the next Strategic Planning Committee meeting. Debbie reported that 1961 Consulting and Holly Valkama have been engaged to support the strategic plan development process which will be guided by a Michael Porter's strategic planning framework. Energy Trust's Strategic Planning Committee and internal staff want to continue working with Holly Valkama and using this framework. Phase one of Michael Porter's approach includes developing plan building blocks: a strengths and capabilities map, a current "unique role of value" statement, and key drivers for scenario planning. Developing these building blocks is undertaken before drafting a plan. Mike presented Energy Trust key drivers at the board workshop in May, such as Integrated Resource Planning, policy and the regulatory environment, workforce and talent. The team wants to test those key drivers and identify which to use in planning. They will look at where they intersect and see if those are appropriate to use.

The next strategic plan period will look ahead to the sunset date of SB 1149 and funding implications. Staff will engage in discussion with Oregon Public Utility staff on future SB 1149 funding and potential legislative approaches.

The board wondered when the straw man would come in. Debbie stated that funding discussions with OPUC will need to precede that so we know more about the regulatory and policy environment. We have meetings with OPUC staff in September, and we'll be testing concepts in October with Renewable Energy Advisory Council and Conservation Advisory Council. A straw man draft plan will be developed in phase two, the plan drafting process.

Debbie described phase two, plan drafting. Three workshops will be held through January 2019: one each with the committee, staff, and the Conservation Advisory Council and Renewable Energy Advisory Council. The board will be informed and engaged along the way.

The draft plan will be presented at the May 2019 workshop and public engagement will occur in summer 2019.

The board asked if the team is thinking about engagement with trade allies. Debbie responded that trade allies are included in the engagement after there is a draft plan, but we can talk about whether to bring them in earlier.

# Board Learning Topic: Awareness and Education as a Long-Term Investment in Program Engagement

Sue Fletcher and Shelly Carlton, managers in Energy Trust's communications and customer service group, provided a presentation on the boarding learning topic of awareness and education. This presentation is about the role of education and awareness in driving long-term savings and for potentially underserved groups.

Shelly described the marketing process and how Energy Trust uses a variety of marketing channels and innovates strategy through feedback. Through some recent feedback and market research, it was observed that some customers need additional education to engage in program services.

The board asked if the role of education is about helping get customers into and moving through the stages of awareness and participation. Shelly responded yes.

Shelly continued that over the last two years, research has identified underserved audiences and helped us learn more about their motivations, as well as helped identify effective education methods for engagement in energy programs and awareness.

The board asked if the education research referenced is our website, and staff agreed to make sure it is available there. Shelly highlighted a finding that energy education is a predictor of paying more attention to energy use, talking to friends about energy, and purchasing an energy-efficient product.

The board asked what it means to have low participant unaided awareness. Shelly explained it is when a participant has trouble recalling Energy Trust without hearing our name earlier in the survey. Sue mentioned that utilities are also a source of information that participants point to when asked this question, and we leverage their communications to customers as well.

Shelly highlighted focus groups with moderate-income attendees with no post-high school education. Attendees had high interest in saving energy, but some skepticism about energy and energy products; were eager to share information but had some misinformation; had a long list of projects to take on, but a short list of friends and family they would call for help. They referenced do-it-yourself projects and educational videos on YouTube as a source of information.

Shelly noted that if we provide education on energy, we both increase awareness and drive customer participation down the road. We need to provide more and better educational content to ensure that we are offering helpful information that can be shared by word of mouth.

Shelly explained that communications and customer service staff have been exploring a few methods for developing and delivering educational content.

Shelly described a new advertising campaign to be released by Energy Trust this summer, which is intended to increase awareness of Energy Trust in a way that leads to action.

Sue closed the presentation by describing the desired education and awareness outcomes, and offered key questions under consideration for staff and board.

The board expressed skepticism about advertising solely to increase awareness, stating that awareness on its own has no value but that understanding what Energy Trust does is more valuable. Other comments were that awareness can offer benefits of engaging new customers and keeping stakeholders informed about the work. While it is difficult to measure the benefits of awareness, the board noted that it is important.

Sue said that we see benefits of awareness particularly as it might engage new customers. Mike said that the Northwest Energy Efficiency Alliance board is talking about the value of an educated consumer to a trade ally contractor.

The board asked what staff needs, and if staff is working with the evaluation committee. Sue said that we value guidance from the board related to the scope of this work and we do not anticipate significant changes in our work in this area in the 2019 budget. Amber said that staff will keep the board informed on this work through future budget action plans.

## **Energy Programs**

#### **Production Efficiency**

Amanda Potter, sector lead for the industrial and agriculture sector, presented on the new custom track program design for production efficiency and recent Request for Proposals process and decision.

Amanda said the decision was made to combine the delivery of custom, strategic energy management and technical services into one program and contract. She mentioned several key drivers including reduction in coordination time, greater flexibility, streamlined program processes and fewer touch points for customers.

The Request for Proposals was issued in March and proposals were received in April. Respondents could bid for all three territories but were informed that only one contractor would be selected as the prime for each territory. Four proposals were received for territory one, four for territory two, and two for territory three. Proposals were scored by territory, but those that were selected were the top three scorers across the board. The selection criteria included cost and energy savings, strength and cohesion of team, strength of the proposal and diversity, equity and inclusion.

The staff recommendation is: Territory 1 – Cascade Energy, Territory 2 – Energy 350 and Territory 3 – RHT Energy.

These respondents brought strong technical expertise, were cost competitive, and provided ideas on how to reach underserved customers. Amanda highlighted strengths of each organization.

The board mentioned that this decision displaced the Portland General Electric – Customer Technical Services team as one of the contractors and asked how that decision was accepted by PGE. Amanda commented that PGE is focused on customer service and a smooth transition. Peter said that we are talking with them about a longer transition, in particular on the Intel megaproject.

The board noted that we will no longer have pools of Allied Technical Assistance Contractors. Amanda said that the winning bidders have the full set of skills needed of ATACs and for delivering Strategic Energy Management. All have engaged some technical partners to provide the full services.

The board noted that this is a good example of streamlined business management practices in response to customer need.

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

#### WHEREAS:

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

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

It is therefore **RESOLVED**:

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

Moved by: Melissa Cribbins Vote: In favor: 9 Opposed: 0 Seconded by: Alan Meyer Abstained: 0

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

#### WHEREAS:

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

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

It is therefore RESOLVED:

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

Moved by:	Alan Meyer		Seconded by:	Melissa Cribbins
Vote:	In favor:	9	Abstained:	0

Opposed: 0

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

#### WHEREAS:

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

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

It is therefore RESOLVED:

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

Moved by: Mark Kendall	Seconded by: Lindsey Hardy
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Vote: In favor: 9 Abstained: 0

Opposed: 0

#### **Production Efficiency**

Amanda said that resolution 847 would allow program funds to be moved across sectors for transition activities in 2018.

The board asked if there are any issues with moving these resources based on utility service territory. Peter said that there are no issues, these funds are in the general budget and will receive our standard allocation.

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

#### WHEREAS:

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

#### It is therefore RESOLVED:

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

Moved by:	Melissa Cribbir	IS	Seconded by:	Ernesto Fonseca
Vote:	In favor:	9	Abstained:	0
	Opposed: 0			

#### **Residential Programs**

Mark Wyman, senior program manager in residential, provided a summary of the motion, Resolution 848, and background on the manufactured home replacement pilot and relationship with Craft3.

Mark stated that this resolution will use excess contingency reserves for establishment of a \$1 million manufactured home replacement loan fund. It will be a direct loan agreement with Craft3 and Craft3 would directly loan to customers. The savings realized from treatments in older, distressed homes do not materialize as they would in single family homes, and the repair costs can exceed the value of the home. Research conducted by Portland State University found a low natural replacement rate for manufactured homes. If there is not an intervention, these homes would not be replaced on their own, and the homes have significant damage and post a variety of risks and challenges for those who live in them.

The replacement of these homes can help with a gap in affordable housing. Manufactured housing is one of the largest sources of naturally occurring affordable housing. The homes can be purchased on average for \$42,000.

Mark described the pilot as a partnership with multiple organizations. The other partner organizations include St Vincent de Paul, CASA of Oregon, NeighborWorks Umpqua and Oregon Housing and Community Services. He described the pilot's research components and objectives, and showed the

pilot incentive grid to distinguish the resource acquisition, need for financing and the loan fund. The incentive investments are different funds than what is proposed here with Craft3.

Energy Trust is trying to create opportunities with this pilot for low-income households. This pilot is targeted at manufactured home parks. Households lease the land and own the houses. Some are owner occupied. Owners have few financing options. Chattel loans are the traditional financing mechanism for manufactured home purchase. They have higher rates and shorter terms compared to other mortgage products. The financing model is about throughput from the factory. Energy Trust saw a need to work with a mission-oriented lender to finance home replacement, and for there to be some separation with actors in this space.

Craft3 sees this opportunity as tied to their mission. The result will be access to capital, competitive terms, saving for maintenance and packaging of grants. Solar is also a possibility on these homes. The interest rates and terms are in development, and Mark reported that they are looking at 6 percent over 15 years. It will always be a set rate and time. There will also be a prorated commitment from the owners for maintenance.

This agreement will be modeled after Energy Trust's past work with Craft3 in the Savings Within Reach program. It will aim to serve customers of all utilities, including natural gas partners. We are providing seed capital to Craft3 at a 15-year term, however we will not seed a loss reserve.

The goal is to keep costs to one-third of a household's income. Next steps were described as working with Craft3 toward a September launch of this loan product. Energy Trust is also looking for other opportunities for capital. There is another group at the state considering this issue too. As other funds come in, it would displace or augment this capital. We are taking this step now because we see an opportunity to do something of value and have willing partners and customers, in addition to capturing the energy savings associated with home replacement.

Roger stated that the board has two issues, the merits of the loan fund and the use of the reserve funds. The board clarified that we are not really using contingency reserves. We are using excess funds that are in the reserves. The board suggested changing the language of the resolution to "excess funds in the contingency reserves."

The board asked where did the excess funds came from. The funds were from interest went into reserve funds, and we had \$2-3 million in excess of target amounts. This has since been changed.

The board asked how the first cohort would be selected. Mark said that this is a partnership with CASA of Oregon, St. Vincent de Paul and NeighborWorks Umpqua. The partners help establish relationships and represent the perspective of the communities.

The board asked if this will this cover the incremental cost and if there are maximum loan amounts.

The board asked if Craft3 is known to borrowers. Mark said that there is a lot of value in bringing community development financial institutions to this market. For these personal property loans, it is difficult for someone else to get engaged.

Desiree Sideroff and Adam Zimmerman from Craft3 added that this type of lending provides challenges. Most lenders will see these as high risk. While Craft3 has not done many loans of this nature, we have done work in the consumer leading space for underserved customers with fair loans across Oregon and Washington in rural areas.

The board asked if the terms are competitive, and Mark responded yes.

The board wondered if manufacturers will be reluctant to participate because they won't have earnings from loans. Mark said that it is about throughput for the manufacturers, and this helps to generate

throughput. We think that they see this as positive. He also noted that we have existing programs to visit manufactured home dealerships and are getting them ready to facilitate these transactions.

The board asked if there will be manufactured homes that won't qualify for the current retrofit incentives available now. Mark said that no. We are interested in introducing more options. We have some customers that will do improvements and nothing prohibits them from doing that.

Alan Meyer moved that a modification be made to the resolution included in the board packet. He moved that the language "excess funds in the" be added before the words "contingency reserves" in the title, line #4, and line #5.

Melissa Cribbins seconded the motion. All approved the resolution with the additional language.

# RESOLUTION 848 USING EXCESS FUNDS IN THE CONTINGENCY RESERVES ACCOUNT ORGANIZATION POOL FOR ESTABLISHMENT OF A MANUFACTURED HOMES REPLACEMENT LOAN FUND WITH CRAFT3

#### WHEREAS:

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

It is therefore RESOLVED:

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

# resolution in the event that Energy Trust ceases operations in 2025 and otherwise provides Energy Trust ratepayer funds with sufficient protection.

 Moved by:
 Alan Meyer
 Seconded by: Melissa Cribbins

 Vote:
 In favor: 9
 Abstained: 0

 Opposed: 0
 Opposed: 0
 Opposed: 0

# **Committee and Advisory Council Reports**

#### Finance Committee, Susan Brodahl

Susan reported that revenue is close to last year. Reserves are ticking up, which we expect to draw down at year-end. The contingency funds available year-to-date amount is where the Craft3 loan for manufactured homes is coming from. This will drop the number to \$3 million. That difference will be put back into reserves listed above the utility programs.

The board pointed out that the Existing Buildings program and Residential program are running low, but that's an issue of timing, and that we are running \$20 million ahead of last year, building reserves we do not want to build. Pati responded that this is according to plan. We will find a way to more clearly indicate in future reports that this is where we meant to be. Peter indicated that we expect to be at or over goal for all utilities. PGE will be low based on one project and we have a pipeline that may get us into reserves by the end of the year.

The first four to five months of the year is typically the lowest spending. Mike clarified that this is where we meant to be at this point. The board pointed out the cash flow projection. We are tracking future commitments, and there are some sizable dollars there. Industrial projects aren't flowing like we expected them to flow, which is having this impact.

#### Evaluation Committee, Lindsey Hardy

Lindsey reminded the board that the evaluation committee notes are in the packet, and that we have talked about most of the studies. Lindsey asked the board if there were any questions and mentioned that Phil and Sarah are available to answer questions about reports, which are also on the web site.

The board wondered what other evaluations should be expected. Phil said to expect the Industrial 2016-17 impact evaluation, Existing Buildings 2017 Impact evaluation, an Existing Buildings process evaluation, a report on New Buildings market research, and later, an operations and maintenance persistence study. Sarah noted a trade ally survey in the field that will be at the next evaluation committee.

The board said that evaluation is at the heart of how we determine savings. They acknowledged that the group does great work, and very thorough, lengthy reporting.

## Policy Committee, Alan Meyer

Alan noted that the June 21 meeting moved to June 27, and many members were unable to make it. Alan mentioned that combined heat and power still seems appropriate although not being used much. He also mentioned the procedure for evaluating funding opportunities beyond the public purpose charge. He reported that Eric Anderson of Pacific Power, Andrea Johnson of Green Empowerment, April Snell of Oregon Water Resources Congress, and James Valdez of Spark Northwest are all joining the Renewable Advisory Council. The committee looked at contractors who receive more than \$500k, Mike reported on new funding opportunities, and Amber reported on the Secretary of State audit.

Alan directed the group to the pink tab in the board packet. Alan introduced this as a procedure for when we come across items that are good things for us to do, but not appropriate for public purpose charge use. This process is meant to cover what is necessary to get us to the point of making a proposal on work that does not fall under the current agreement.

With this approach we will consider if the work aligns with the purpose statement, can be pursued under existing policies, provides primary benefits to ratepayers, and if it builds on current knowledge and expertise. If the work enhances what we're already doing, there is no need to go through this process. The Clean Energy States Alliance low-income solar grant is an example. It is not a new program, but enhances a current program.

The board asked if the opportunity is under \$50,000 and what happens when a project of this type is something that the policy committee dislikes? Mike indicated that this was a learning opportunity and that the number was arbitrary, but is indicative of a very small investment. The board pointed out that they would not want to get sideways with the policy committee, and \$50,000 seems like a lot. Mike pointed out that there are very few of these types of things and suggested additional criteria. The board suggested that they strike the mention of retroactive.

The board also indicated the importance of remaining flexible and relevant. The board said the statement "does not detract from Energy Trust's ability to do Oregon Public Utility Commission work" seems interpretable. Is there a process to make a determination with them so that the OPUC agrees with this? Board mentioned that Elaine is on the committee. The board pointed out that Energy Trust is unique, and Steve Bloom is an ex-officio member of the board, and OPUC staff attend meetings regularly.

Mike asked if it should just go to the committee. The board agreed that it should, so that the OPUC is always aware.

#### Board Nominating Committee, Debbie Kitchin

Debbie reported that the board has an announcement for three open positions, and are looking for member diversity, different perspectives, and representation from different areas of the state, Portland and Eastern Oregon, and experience providing services to low-income communities or managing legal issues for a large organization.

Interested people should send a statement of interest with brief bio or other background documents by August 17. Several have been received so far. Interviews will take place in late August through early September.

The board wondered if we had reached out to past board members. Debbie mentioned that they are putting together a nominating committee that includes past board members.

#### Conservation Advisory Council, Lindsey Hardy and Alan Meyer

Lindsey and Alan provided an update. The last meeting finalized the Conservation Advisory Council operating principles, the result of a process in January/February to look at how the Conservation Advisory Council operates and ensure we are reporting back to the board effectively. Strategic planning

and dashboard, unique value, and strengths were covered. There was a discussion around the meaning of the word sustainable. Could be a discussion in future.

Conservation Advisory Council also had discussion on transitioning Energy Trust reporting to gross savings from net, based on a presentation from Fred. There was an in-depth discussion with the Council on the merits of setting goals and reporting savings using gross savings, as compared to the current practice of using savings that are adjusted for free riders and spillover (net savings). In response to a question. CAC members asked questions about how free ridership and spillover will be handled, and how Energy Trust will know when it's time to exit a market. Council members were supportive of transitioning Energy Trust to gross savings goals and reporting, although there were a few follow-up questions and significant interest in further understanding how Energy Trust decides when to end or reduce incentives.. In response to a board question, Fred explained that most Northwest utilities, and many utilities nationwide, set goals based on gross savings.

#### Renewable Energy Advisory Council, Alan Meyer

Alan reported that there was a resilient communities' presentation, and Japan's recovery was provided as an example. A large earthquake in the Portland-area will create isolation, and is a reason for us to continue to invest in standalone systems. Energy Trust should be committed to that going forward.

Mike stated that Conservation Advisory Council and Renewable Energy Advisory Council notes are an area where we will look to save staff time in 2019, related to the earlier conversation about business planning. Since the Conservation Advisory Council and Renewable Advisory Council are advisory councils to the board, finding time-efficient ways to have the advisory councils summarize their discussion at the end of each topic and specify their advice to the board will be a.

The board clarified that they would like staff to talk to Conservation Advisory Council and Renewable Energy Advisory Council about this change, and Mike concurred. The board appreciates the need to reduce staff time, but also appreciates capturing and attributing dialogue and questions as they provide helpful context regarding stakeholders. Even small differences in opinions are helpful to know.

The board noted that at times the full advisory council meeting cannot be heard by phone. In these cases, notes help put the pieces together.

# **Closing Comments**

Greg Henderson from the Southern Oregon Business Magazine stated that he was grateful for the invite and impressed with the content and board dialogue. He once heard that if you found yourself at a conference and were the smartest person in the room, you were at the wrong conference. If that is true, then, Greg said, he is not planning to leave this room.

# Adjournment

The board adjourned at 2:55pm

The meeting adjourned at 2:55p.m. **The next meeting of the Energy Trust Board of Directors** will be on <u>Wednesday</u>, <u>October 17</u>, <u>2018 at 10:30 a.m</u>. at Energy Trust, 421 SW Oak, Suite 300, Portland, Oregon.

Mark Kendall, Secretary

# PINK PAPER

# Board Decision Authorize Editorial Changes to the Balanced Competition Policy

October 17, 2018

# Summary

Authorize non-substantive editorial changes to the Board's Balanced Competition Policy.

# Background

- The Balanced Competition Policy prohibits any Energy Trust contractor from being a prime contractor of more than three programs. The purpose of the policy is to ensure competition for Energy Trust program management contracts.
- In its current form, the policy is based on several years' experience managing program management contracts as the efficiency industry has grown and consolidated:
  - Before 2015, the policy allowed a single firm to hold no more than two program management contracts. Such firms could subcontract on other programs as long as the subcontract represented no more than 33 percent of the program's energy savings goals.
  - In 2015, the board revisited the policy in light of industry consolidation. CLEAResult had acquired Conservation Services Group, PECI and, most recently, Ecova, all of which were previously program management contractors. The board waived the two-contract limit and directed staff to assess the effects of consolidation in the energy efficiency industry on competition for program management services.
  - Staff's 2015 review found:
    - Industry growth from \$1 billion in 2005 to \$8 billion in 2015;
    - Firms in some ways were stronger, better capitalized and able to provide more comprehensive services;
    - Competition policies in other settings (e.g., OPUC requirements for competition in utility resource procurement) did not limit the number of contracts for which an entity could compete, but rather to focus on a competitive process in bidding;
  - Staff concluded that a three-contract limit would not significantly increase Energy Trust risk, and the possibility that a single contractor would fail to deliver on three contracts at the same time is remote.
- The Board concurred and adopted the current three-program limitation.

# Discussion

- Currently, no single entity operates more than two program management contracts, which is consistent with the policy. The following firms have PMC contracts:
  - Multifamily Lockheed Martin is PMC (CLEAResult is a subcontractor)
  - Existing Buildings ICF is PMC (CLEAResult is a subcontractor)
  - New Buildings CLEAResult is PMC
  - Residential CLEAResult is PMC
- Percent of savings across all programs:
  - o 2018: CLEAResult provides 23% of electric and 48% of gas savings;
  - 2014: of six contractor-managed programs, two contracts represented 33% of total savings
  - 2011: of five contractor-managed programs, two contracts represented 40% of total savings;
  - 2007 2010: of four contractor-managed programs, two contracts represent 50% of total savings;
  - 2002: of five contractor-managed programs, two contracts represented 40% or total savings.

# Recommendation

Energy Trust programs are in compliance with the policy, and staff recommends only editorial changes. The most extensive changes are in section 4; they too are intended to clarify the policy, not to change it substantively.

#### RESOLUTION 851 AUTHORIZING EDITORIAL CHANGES IN THE BALANCED COMPETITION POLICY

#### WHEREAS:

- 1. The Energy Trust Policy Committee reviews Energy Trust policies every three years to see if they require amendment.
- 2. The Balanced Competition Policy prohibits any Energy Trust contractor from being a prime contractor of more than three programs. The purpose of the policy is to ensure competition for Energy Trust program management contracts.
- 3. The policy is based on several years' experience managing program management contracts as the efficiency industry has grown and consolidated.
- 4. Currently, no single entity operates more than two Energy Trust program management contracts, which is consistent with the policy.
- 5. The Policy Committee and staff have reviewed the policy and recommend only editorial changes.

It is therefore RESOLVED that the Energy Trust Board of Directors authorizes editorial changes in the Balanced Competition Policy as shown in the attached.

# 4.09.000-P Rules to Assure Balanced Competition for Energy Trust Program Management Contracts

History			
Source	Date	Action/Notes	Next Review
			Dale
Board Decision	August 7, 2002	Approved (R122)	August 2005
Board	December 15, 2004	Waived two-program limit for	December
		Efficient Facility Operations	2007
		RFP (R305)	
Board	April 9, 2008	Amended (R470)	March 2011
Policy	March 8, 2011	Reviewed, no changes	March 2014
Committee			
Board	May 23, 2012	Amended (R630)	May 2015
Board Decision	May 20, 2015	Amended (R744)	May 2018

1. Arrangements for regulated utility information and referrals. Energy Trust will arrange directly with regulated utilities for information and referrals that help Energy Trust reach the public, and come as a byproduct of the regulated role. Energy Trust and utilities will work together to determine what activities and information will be made available with or without a fee. Examples:

- Coordination of 1-800 response for household and business efficiency inquiries
- Qualification of leads coming from utility/customer relationships and referral to programs
- Access to historic energy usage data as requested by utility customers
- Access to utility-generated consumer demographic information for evaluation and/or marketing purposes
- Utility customer representative role in marketing

These capabilities will not influence selection of program management contractors.

Rationale

- These are services that stem from the natural monopoly role of the utility.
- They are unique and real assets, but not appropriate for the competitive bid.
- 2. Limitation on number of program management contracts awarded to a single contractor. No single firm, including other companies under the same ownership and affiliates, will be a prime contractor for more than three concurrent program management contracts.

This limitation does not apply to subcontracts for installation or technical work (studies, commissioning, etc.) that are awarded to multiple contractors as part of implementation of a single program.

Rationale

- Energy Trust needs to maintain a competitive market for program management. If one competitor wins all slots, others will not develop the skills, nor are they likely to bid in the future.
- 3. Limitations on participation of regulated personnel in competitions for program management contracts. With the exception of utility work, for which Energy Trust contracts in connection with supplemental energy efficiency activities pursuant to the 2007 Renewable Energy Act, an individual within a regulated utility cannot perform work under an Energy Trust contract for program management *and* perform work as part of the regulated utility (i.e., functions billed to ratepayers) in Oregon.

Rationale

- Regulated utilities have their own objectives, which in some cases include maintaining and building load. It would be difficult to manage employees who also report to a regulated utility and its objectives as "first boss."
- To have ratepayers pay for part of the cost of an FTE that was used for competitive Energy Trust work would make it difficult for others to compete.
- 4. No review of own work or work of related companies. Program management contractors must demonstrate to Energy Trust that they have appropriate controls in place to independently verify projects and energy savings that they review in their role as program management contractor for Energy Trust. This includes work done by the program management contractor or its affiliate under a separate contract, such as recommendation of efficiency measure brands, models or performance, technical analysis of savings, or equipment installation or commissioning.

Rationale

- Avoids having program management contractors review their own work.
- Reduces consumer confusion about roles.

# PINK PAPER

# Board Decision Committee Assignments



October 17, 2018

#### RESOLUTION 852 BOARD COMMITTEE APPOINTMENTS (SUPERSEDES RESOLUTION 843)

WHEREAS:

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

It is therefore RESOLVED:

- 1. This resolution supersedes Resolution 843, adopted by the board at its June 6, 2018 meeting.
- 2. That the Board of Directors hereby appoints the following directors to the following committees for terms that will continue until a subsequent resolution changing committee appointments is adopted:

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

Executive Director Review Committee
Melissa Cribbins, Chair
Debbie Kitchin
Roger Hamilton (ex officio)
Amanda Sales, staff liaison
Finance Committee
Susan Brodahl, Chair
Ernesto Fonseca
Debbie Kitchin
Anne Root
Roger Hamilton (ex officio)
Pati Presnail, staff liaison
Policy Committee
Alan Meyer, Chair
Ernesto Fonseca
Anne Root
Elaine Prause (ex officio)
Roger Hamilton (ex officio)
Debbie Goldberg Menashe, staff liaison
Program Evaluation Committee
Lindsey Hardy, Chair
Lindsey Hardy, Chair Susan Brodahl
Lindsey Hardy, Chair Susan Brodahl Alan Meyer
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio)
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio)
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison <b>Strategic Planning Committee</b>
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison Strategic Planning Committee Mark Kendall, Chair
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison <b>Strategic Planning Committee</b> Mark Kendall, Chair Susan Brodahl
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison <b>Strategic Planning Committee</b> Mark Kendall, Chair Susan Brodahl Lindsey Hardy
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison <b>Strategic Planning Committee</b> Mark Kendall, Chair Susan Brodahl Lindsey Hardy Janine Benner, ODOE (ex officio)
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison <b>Strategic Planning Committee</b> Mark Kendall, Chair Susan Brodahl Lindsey Hardy Janine Benner, ODOE (ex officio) Elaine Prause, OPUC (ex officio)
Lindsey Hardy, Chair Susan Brodahl Alan Meyer Ken Keating, expert outside reviewer Jennifer Light, expert outside reviewer Dulane Moran, expert outside reviewer Jamie Woods, expert outside reviewer Warren Cook (ex officio) Roger Hamilton (ex officio) Sarah Castor, staff liaison <b>Strategic Planning Committee</b> Mark Kendall, Chair Susan Brodahl Lindsey Hardy Janine Benner, ODOE (ex officio) Elaine Prause, OPUC (ex officio) Roger Hamilton (ex officio)

3. The executive director, general counsel or chief financial officer are authorized to sign routine 401(k) administrative documents on behalf of the board, or other documents if authorized by the Compensation Committee.

- 4. The board also acknowledges that the following board members have committed to attend advisory council meetings:
  - a. Conservation Advisory Council: Lindsey Hardy and Alan Meyer
  - b. Renewable Energy Advisory Council: Alan Meyer and Ernesto Fonseca

Moved by:

Seconded by:

Vote: In favor: Abstained:

Opposed:

page 3 of 3

# Tab 2

# **Board Decision Resolution 853**

ELECTING ERIC HAYES, ELEE JEN, HENRY LORENZEN, & ROLAND RISSER TO THE ENERGY TRUST BOARD OF DIRECTORS

October 17, 2018

#### **RESOLUTION 853**

# ELECTING ERIC HAYES, ELEE JEN, HENRY LORENZEN, & ROLAND RISSER TO THE ENERGY TRUST BOARD OF DIRECTORS

#### WHEREAS:

- 1. Ken Cannon resigned his position on the board effective February 6, 2018. His position on the board has remained open and unfilled since that time.
- 2. The board Nominating Committee has reviewed candidates for the board seat vacated by Ken Cannon and nominates Eric Hayes, Coordinator of International Brotherhood of Electrical Workers to fill the remaining term through 2019.
- 3. Dan Enloe resigned his position on the board effective June 2018. His position on the board has remained open and unfilled since that time.
- 4. The board Nominating Committee has reviewed candidates for the board seat vacated by Dan Enloe and nominates Elee Jen, Principal of Business Development of Energy Performance Engineering to fill the remaining term though 2020.
- 5. John Reynolds resigned his position on the board effective June 2018. His position on the board has remained open and unfilled since that time.
- 6. The board Nominating Committee has reviewed candidates for the board seat vacated by John Reynolds and nominates Henry Lorenzen, former member and past chair of the Northwest Power Conservation Council to fill the remaining term through 2019.
- 7. Eddie Sherman resigned his position on the board effective August 28, 2018. His position on the board has remained open and unfilled since that time.
- 8. The board Nominating Committee has reviewed candidates for the board seat vacated by Eddie Sherman and nominates Roland Risser, retired US Department of Energy Deputy Assistant Secretary, Renewable Power to fill the remaining term through 2021.

Moved by:

Seconded by: Abstained:

Vote: In favor:

Opposed:0
# Tab 3



# Attachment 2

# **WES Tri-City Cogeneration Project**

October 17, 2018

## Summary

The Tri-City Water Pollution Control Facility (Tri-City) is a water resource recovery facility (WRRF) operated by Water Environment Services (WES), an agency of Clackamas County. The municipally owned plant processes an average of 12 million gallons of waste water per day and is located near the confluence of the Clackamas and Willamette Rivers in the City of Oregon City. The facility currently operates a 30+ year-old 250 kW rich-burn cogeneration system, which is at the end of its useful life. WES proposes to install and operate a new lean-burn cogeneration system with increased capacity to use biogas as renewable fuel that is overwise flared.

The \$5.7 million cogeneration project would have a nameplate capacity of 600 kW and estimated to generate an average of 4,324 MWh per year (0.49 aMW). The biopower system is sized to accommodate increases in biogas volume as the community grows. This combined heat and power project would offset about 50% of the electricity needed to operate the plant, which is in Portland General Electric's (PGE) service territory. Staff and an independent, third-party consultant evaluated the project and found that it aligns with Energy Trust's goals and falls within industry norms of design, expected costs, and expected generation. The project would use industry standard equipment and is designed by competent and experienced engineering firms. Overall, the renewable energy generation project is low risk technologically, operationally, and financially.

Staff propose a \$1.8 million installation incentive. This proposed incentive assumes WES will receive a \$2.1 million Renewable Development Fund incentive from Portland General Electric. Staff suggest one payment of \$1.0 million upon commercial operation and an additional \$800,000 incentive no sooner than 12 months later based upon meeting a reasonable generation threshold. In coordination with Portland General Electric, Energy Trust would request 100% of the renewable energy certificates (RECs) generated by the project over a 20-year term.

## **Energy Trust Goals**

- The WES Tri-City Cogeneration Project supports Goal 2 of the 2015-2019 Strategic Plan: to accelerate the rate at which renewable energy resources are acquired.
- This project will add to the portfolio of WRRF combined heat and power (cogeneration) projects Energy Trust supported. Including this project, this portfolio would represent 5.6 aMW of generation.

### Background

• In March 2018, Energy Trust began a competitive process to allocate incentives for renewable energy facilities in Portland General Electric service territory and Pacific Power territory. One application was received: the WES Tri-City Cogeneration Project.

- Tri-City processes an average of 12 million gallons of wastewater per day and uses anaerobic digestion to process municipal wastewater solids. The City expects the volume of wastewater received by the plant to grow slowly and steadily as their service territory expands and population grows.
- A by-product of the anaerobic digestion process is biogas, which is about 60% methane and enough energy content to power a cogeneration engine. The facility has used biogas to generate renewable electricity and heat for more than 30 years. The current 250 kW cogen is at the end of its service life and does not have the capacity to use the volume of biogas created by the facility's digesters. At present, excess biogas is flared.
- Energy Trust has supported the City in developing this project since 2014, providing \$158,000 in project development assistance to aid in feasibility and design.
- The proposed cogeneration project would primarily include removal of the existing cogeneration engine and hot water boiler; extensive piping and new controls; installation of a new 600 kW cogeneration engine in the existing digester control building; installation of an improved cogeneration heat recovery system; and installation of a new duel-membrane biogas storage system and gas treatment skid. This renewable energy installation would be part of a broader \$33 million facilities expansion at Tri-City.
- The new Caterpillar cogeneration engine is expected to generate 4,324 MWh of net-metered electricity per year. Prior to combustion in the cogen set, contaminants would be removed in a biogas cleaning skid, which would result in less air pollutants than the previous cogen system.
- Project construction is expected to begin in winter 2019. WES anticipates commissioning and testing in fall 2020 with commercial operation occurring in winter of 2020 / 2021.

# Staff Evaluation

For projects eligible for installation incentives, Energy Trust staff thoroughly evaluate the following evaluation areas prior to an above-market cost analysis:

- Site control
- Development and operational team expertise
- Permitting
- Energy conversion technology
- Expected generation
- Interconnection
- Capital costs
- Operational and maintenance
- Financing
- Project revenues

### Findings:

• The project meets key qualifications for funding from Energy Trust: it is less than 20MW in capacity, it offsets electricity demand from PGE and it meets the requirements of a qualifying biopower project.

### Site Control, Development and Operational Team

• WES owns the site and has title.

• WES staff and their technical consultants are highly qualified and experienced with operating and designing biogas cogeneration facilities. WES' Capital Program Manager and WRRF Supervisor were directly involved in the Clean Water Services-Durham and the City of Gresham cogeneration projects, respectively.

### Permitting

• Energy Trust staff foresees no permitting obstacles or fatal flaws. More significant capital improvements, including construction of a 1.3-million-gallon digester, are already underway.

### Energy conversion technology and generation

- The proposed renewable energy generation technology, a reciprocating engine using digester biogas as fuel, is proven, common, and operating at nine WRRFs in Oregon. The reciprocating engine will power a generator, producing electricity that off-sets about 50% of Tri-City's on-site electric loads, thus reducing the demand for electricity from the electric utility provider, Portland General Electric. Thermal energy from the cogen set will be used to heat the digesters and for other process heat loads.
- The cogen engine is sized and designed to use existing and future estimated volumes of biogas. Renewable electricity generation from the cogen set is expected to increase to full output (maximum capacity) by the end of the first decade of operation (2029), from approximately 3,500 MWh in year one to approximately 4,500 MWh in year 10. Average annual generation over 20 years is expected to be approximately 4,324 MWh.
- The planned installation of biogas storage system is a best practice and will greatly improve the cogen system's operational efficiency.

### **Interconnection**

• WES submitted a level-3 net-metering application to Portland General Electric. PGE advised that the project will need to improve grounding through configuration of customer-owned transformers as well as install transfer-trip capability. Fiber optic lines are presently installed to a distributed [diesel] standby generator (DSG) controlled by PGE, therefore additional interconnection costs related to transfer trip are expected to be de minimus.

### Capital costs, operation and maintenance, financing, and revenue

- Total capital costs for the project are estimated at \$5.7 million, which is based on 90% design. There are no firm bids for equipment, materials, or labor, just estimates from an experienced engineering and consulting firm, CH2M/Jacobs. Staff finds these capital costs reasonable based on similar municipal biogas energy projects Energy Trust supported.
- Renewables staff cross-referenced the estimated O&M costs with realized costs from similar cogen systems at municipal water resource recovery facilities. Staff estimated that the project's O&M costs will equate to about \$0.025 / kWh generated, escalated at 2% per year. Renewables staff believes this is justifiable based on project scale and simplicity [e.g. no co-digestible feedstock, one engine].
- Project delivery will be design, bid, and build as part of a larger facilities expansion. WES will fully fund the cogeneration project using cash reserves and no loans.
- Tri-City receives electric services through PGE's schedule 85. Assuming 2.0% inflation, staff used \$60.85 / MWh as a reasonable approximation of year-one (2021) revenue (blended on and off-peak energy costs).

• WES has applied for a \$2.1 million Renewable Development Fund (RDF) incentive from Portland General Electric. RDF funding decisions will be made in fall 2018.

## **Above-Market Cost Analysis**

Above-market costs are calculated as the difference between the cost to produce power over a specific term, and the market value of the power. Above-market costs are calculated on a net present value basis: all costs and revenues over the project term are discounted to their current value as if they existed today.

- Staff evaluated this project over a 20-year term. The length of the term is aligned with other municipally owned biogas facilities that submitted installation incentives.
- The project was evaluated at an 8% discount rate, consistent with the 8-10% range of discount rates Energy Trust used when evaluating other municipally or government-owned projects.

The project has an above-market cost of \$3,914,549. If the project receives the total requested incentive (\$2.1 million) from PGE's Renewable Development Fund, then the project's above-market cost is (\$1,970,105) with an IRR of 0.9%.

## Staff's Overall Evaluation and Recommendation

- The overall project risk is minimal. This project involves replacement and expansion of an existing cogeneration engine. Tri-City staff are experienced operators of biogas fueled cogeneration systems. Assuming regular scheduled system maintenance, the biopower engine requires only modest direct operator oversight.
- Overall, the most significant risk facing this project are equipment capital cost based on estimates, not actual bids.
- A third-party consulting firm found WES' application to be complete and low risk, and energy production assumptions to be conservative, supported by data, and realistic. They also concluded that the estimated capital costs for the project seem to be reasonable for the industry and that the project appears financial viable over a 20-year project life.

## **Proposed Incentive**

- Staff proposes that Energy Trust provide an incentive of \$1,800,000 paid in two installments: \$1,000,000 at commercial operation, and \$800,000 not sooner than a twelve months later.
- Consistent with Energy Trust's policy on Renewable Energy Certificates (RECs), we would collaborate with Portland General and request 100% of the project's RECs.
- Funds for the project are within the 2018 Other Renewables program budget.

### RESOLUTION XXXX AUTHORIZING AN INCENTIVE FOR THE WES TRI-CITY COGENERATION PROJECT

### WHEREAS:

- 1. In April 2018, Energy Trust began a competitive process to allocate incentives for renewable energy facilities in Portland General Electric service territory and Pacific Power territory. One application was received: the WES Tri-City Cogeneration Project.
- Water Environment Services of Clackamas County (WES) proposes to install a 600 kW cogeneration system at the existing Tri-City Water Pollution Control Facility, resulting in 4,324 MWh of generation annually, on average. Generation will offset electricity that would otherwise be purchased from Portland General Electric (PGE). Project construction is expected to begin 2019, with commissioning in 2020, and commercial operation in 2021.
- 3. Staff finds that the project has significant strengths and is low risk. The project will be municipally-owned and they are experienced operators of a biogas cogeneration project. Staff sees no significant permitting challenges.
- 4. Above-market costs are \$3,914,549 (present value) over a 20-year period if the project does not Renewable Development Grant from PGE, or \$1,970,105 if the project receives a \$2.1 million grant from PGE.
- 5. Staff proposes an incentive of up to \$1,800,000 to be paid in two installments. The first payment would be \$1,000,000 at commercial operation and \$800,000 no sooner than 12 months later based on a generation threshold.
- 6. Staff proposes to request Renewable Energy Certificates (RECs) equivalent to 100% of the project's expected generation over 20 years.

It is RESOLVED that the Executive Director is authorized to negotiate a funding agreement for up to \$1,800,000 in incentives to offset the above-market cost of the 600 kW cogeneration project owned by Water Environment Services of Clackamas County, consistent with the terms outlined above.

Moved by:		Seconded by:
Vote:	In favor:	Abstained:
	Opposed:	[list name(s) and, if requested, reason for "no" vote]

# Tab 4

# Audit and Compensation Joint Committee Meeting

September 26, 2018

#### Attending by Teleconference

Melissa Cribbins, Chair of the Compensation Committee, Mark Kendall

### Attending at Energy Trust offices

Karen Ward – *Climate Trust*, Pati Presnail, Cheryl Gibson, Debbie Menashe, Cheryle Easton – *Energy Trust of Oregon* Debby Deering -- *Moss Adams* 

### **Report of Independent Auditors**

Moss Adams completed the audit of the Energy Trust of Oregon 401k plan for the year ended December 31, 2017. Debby Deering presented the plan financial statements, and their communications with those charged with governance (sometimes called an 'opinion letter'). In the course of the audit, the team encountered no problems or obstacles. They noted that Energy Trust staff should perform more frequent reconciliations between payroll and the plan contributions, and noted one instance of a vacation payout that did not have the appropriate treatment for 401k contributions which has since been rectified.

In planning for next year, we noted that Moss Adams will audit the records of both the old provider (Reliance Trust) and the new provider (Principal) which will result in a slightly longer audit.

Now that the audit is complete, the next step is to publish the form 5500 tax return for the plan, and notify employees how to access the report through the Department of Labor website.

Meeting adjourned at 4:50 pm

The next meeting of the audit committee (without the compensation committee) will take place November 14 9:00 to 10:00 am, at Energy Trust offices. The purpose of this meeting is to begin the engagement with Moss Adams for the 2018 financial audit.

# Tab 5

## **Compensation Committee Meeting**

August 23, 2018 3:30 p.m.

### Attending by Teleconference

Melissa Cribbins, Chair; Mark Kendall

#### Attending at Energy Trust offices

Cheryle Easton, Mike Colgrove, Amanda Sales, Debbie Menashe, Energy Trust Jeff Gates and Shelby Gatewood, Cable Hill Partners

### **Review and Approval of April 26, 2018 Meeting Notes**

The minutes of April 26, 2018 were reviewed and approved by the committee as submitted.

### **Retirement Plan Quarterly Fiduciary Investment Review**

Jeff Gates and Shelby Gatewood, of Cable Hill Partners, joined the meeting for a quarterly plan performance update and discussion. Cable Hill Partners is the new investment advisor for Energy Trust's retirement plans, and it is anticipated that Jeff and Shelby will meet with the Compensation Committee at least quarterly for updates on the retirement plan performance. In addition, representatives of Principal, the plans' new third party recordkeeper provider, will join the committee on occasion.

Shelby opened the report with an update on retirement plan participation and utilization rates. Jeff then reviewed current plan investments with the committee and described Cable Hill's approach and methodology for scorecard system methodology, which incorporates both quantitative and qualitative factors for evaluating fund managers and their investment strategies in order to monitor plan fund investments. Funds and managers are rated on a score of zero to 10. Funds scoring at six or below are placed on a watchlist. Funds remaining on a watchlist consistently would be suggested for removal from the available fund investment lineup.

Jeff then proposed that the committee consider adopting an Investment Policy Statement and provide a proposed draft to the committee for review. Debbie Menashe will work with the committee to review the proposed statement, which would include specific timeframes for watchlist investments monitoring among other things. The committee will take the proposed investment policy statement up at their next meeting.

Shelby then reported on employee education sessions, and the committee asked for another update on training and training modules at its next meeting.

Committee members asked about underlying market trends and indicators, and Shelby and Jeff directed them to the materials provided in the packet distributed to committee members. This type of material will be provided to the committee on a quarterly basis. If committee members want to see additional or different information, Cable Hill will provide that, and Debbie and Amanda Sales will connect with committee members to ensure that they receive information of interest.

# **2019 Benefits Renewal Update**

Amanda Sales reported on initial estimates for 2019 benefits renewal. Increases in premiums are expected, and Brown & Brown, Energy Trust's health and welfare plan brokers, are going to market for Energy Trust to ensure a full view on pricing options for the organization's benefit package. Amanda will return to the Compensation Committee in October for a full report on the proposed health and welfare plan renewal package.

The committee also reviewed the Energy Trust Welfare Benefit Plan Summary Plan Description Wrap Document and approved it as presented.

Moss Adams will present the 401K audit report to the combined Audit and Compensation Committee late September early October.

Meeting adjourned at 4:30 p.m.

Next Compensation Committee Meeting: October 25, 2018, 3:00 – 4:30 pm.

# Tab 6

# **Evaluation Committee Meeting**

July 11, 2018, 12:00 pm

### Attending at Energy Trust offices

Mike Bailey, Susan Brodahl, Sarah Castor, Michael Colgrove, Warren Cook, Phil Degens, Andy Eiden, Sue Fletcher, Andy Griguhn, Fred Gordon, Jackie Goss, Marshall Johnson, Ken Keating, Oliver Kesting, Anna Kim, Erika Kociolek, Steve Lacey, Scott Leonard, Joe Marcotte, Debbie Goldberg Menashe, Alan Meyer, Dulane Moran, Nick Ricciardi, Thad Roth, Adam Rovang, Dan Rubado, Andrew Shepard, Brien Sipe, Kenji Spielman, Marc Wasserman, Jamie Woods, Mark Wyman

### Attending by phone

Lindsey Hardy - Evaluation Committee Chair, Kate Scott

# Short Take: Diversity, Equity & Inclusion Language in Program Requests for Proposals and Qualifications

Presented by Sarah Castor

<u>Background</u>: For the last several years, Energy Trust has been actively working to promote Diversity, Equity & Inclusion (DEI) activities and initiatives within the organization. In 2016, one DEI activity involved adding language to solicitations for program services around DEI – specifically, a request for proposals (RFP) for Existing Buildings program management contractor (PMC) services, and requests for qualifications (RFQs) for Production Efficiency program delivery contractor (PDC) services for the standard lighting and standard industrial and agriculture tracks. PDCs are different than PMCs – they are mostly trade ally (TA) network managers. It is a different role than a PMC, who would manage processing incentives and marketing, etc. Those types of tasks are handled internally for PE.

For the EB RFP, the added language was a request for two pages on the respondent's approach and strategies for DEI – what they do in their own company and how they would approach DEI in program management and delivery. The RFP also included a link to a fact sheet on DEI at Energy Trust (on the website).

For the PE RFQs, the language was different – there was a request for some content on respondent activities within their own organization or partnerships to promote DEI, but the content had to be within an overall eight-page limit for qualifications. It was expected that content in the qualifications statements would be shorter than in the proposals. There was no link to the DEI fact sheet in the RFQ.

The goals of this evaluation were to look at the impact of the new language on the proposals and qualifications statements, and on resulting statements of work (SOWs) and program implementation and reporting, to see if adding language furthered DEI activities within the programs.

The first phase involved interviews with Energy Trust staff and selected contractors, and a review of the submissions from selected and non-selected contractors. In the second phase, there was another round of interviews and review of program SOWs and monthly reports. MetaResource Group was the evaluator.

<u>Findings</u>: The two Existing Buildings proposals received included substantial DEI language and content woven throughout the proposals, not just in the two pages requested. The evaluator noted that it was covered more extensively in the selected proposal than in the non-selected proposal, but was included in both. The firm selected as the PMC was able to articulate the connection between what they proposed doing with the program and our DEI initiative.

Since then, the PMC is implementing many DEI activities, and their SOW contains significant DEI-related content. They have designated a trade ally (TA) coordinator as a diversity lead, and that TA coordinator meets with Energy Trust program staff regularly to talk about TA network and DEI activities. DEI content is also included in the TA outreach plan. The PMC has translated flyers into Spanish and Russian. There is a new section in the monthly reports on DEI activities.

The evaluator noted that some continuing activities could be considered as related to DEI, but are not explicitly connected to DEI in monthly reports. The program does a lot of work around outreach to small- and medium-sized business and rural customers that is not linked to DEI activities. The PMC and Energy Trust staff talked about wanting more clarity on DEI goals, as they relate to the commercial sector, and are concerned about cost-effectiveness – it may cost more to reach customers, while savings may not be greater.

On the Production Efficiency side, qualifications statements included some content on firms' DEI activities but not a lot, partly because it was a request for qualifications rather than a request for proposals. Firms also noted that they did not know exactly how to approach DEI. These are smaller companies, and they are looking to learn more about Energy Trust's work on DEI and use that to inform what they do.

The monthly reports describe activities considered DEI-related, but there is no explicit link to DEI. Outreach to rural TAs and small businesses would seem to fall under DEI, but the PDCs did not articulate that link.

<u>Recommendations</u>: For future RFPs, the evaluator recommended placing DEI language nearer the start of RFP, to indicate more emphasis. Language should also distinguish between contractor internal practices around DEI and program approach to reaching diverse customers and TAs. The evaluator also recommended more specificity in the definition of diverse customer and goals for programs. If possible, the RFP should provide info on market characteristics to get proposers thinking in terms of where we want to have them target.

For future RFQs, the recommendation was to expand DEI language to talk about trade ally and customer types of interest, as well as geographic areas we want to target. We should also include a link to the DEI fact sheet.

Other recommendations were to continue to grow the role of the TA coordinator and diversity lead within the Existing Buildings program. PMCs and PDCs should be able to explicitly state connections between existing program activities and DEI (not just the new ones). For example, the small business direct install offering supports small customers, non-Portland Metro customers. Energy Trust should work to define DEI for the industrial sector and articulate how the program supports DEI activities.

MetaResource Group also had a few ideas for documenting and tracking DEI-aligned activities in the future, mostly around mapping and visualizing the reach of programs. They also recommended developing more qualitative descriptions of program activities.

Alan asked if the PMC and PDCs had missed the opportunity to talk about things they are doing related to diversity because we did not define it clearly or broadly enough or because they just did not see the connection. Sarah that it was a little of both. We had not defined DEI very clearly for these sectors in 2016 and 2017, and also they were not connecting the dots.

Key takeaways from the evaluation included that the inclusion of DEI language affected submissions to the RFP a lot, and to the RFQ a little, and that there are many existing activities that may be DEI-related but are not explicitly being connected to DEI. The evaluator recommended that formally tracking existing activities that support DEI would be useful, especially if goals are to be set.

<u>Energy Trust Take</u>: Both programs have been working to incorporate DEI goals and support PMCs and PDCs in DEI-related activities. Energy Trust is currently working to define underserved for each sector and estimate baseline activity in each sector. The RFPs released since the EB RFP (including residential, New Buildings, and PE custom PDC) have included more detailed information and requests about DEI, and Energy Trust staff will continue to work on this language as needed.

Warren asked how DEI factors into the scoring of RFPs and RFQs. Fred responded that we have not used a standard weight for DEI across all RFPs and RFQs; we are still figuring that out. Debbie commented that since the EB RFP and PE RFQ were evaluated, staff have received feedback to more clearly define DEI, and since then, definitional work has been a focus; we envision that it will inform program design and inform future solicitations.

### 2018 Energy Saver Kit Survey Results

Presented by Sarah Castor

<u>Background</u>: Periodically, Energy Trust does a phone survey (separate from Fast Feedback) of people who ordered and received energy saver kits (ESKs). The survey asks about satisfaction with the ordering process and the kit overall, what items in the kit were installed or removed, and includes other questions related to how they became aware of the ESK offering, and their motivations to order the kit. The most recent survey was conducted in 2016, in conjunction with the Existing Homes program process evaluation; surveys were also conducted in 2011 and 2013. Staff decided to conduct an ESK survey in 2018 due to big changes to ESKs in 2017, which included updates to the web order form, new items (showerheads that look quite different from those included previously, shower wands, showerheads with different flow rates, and different kit configurations).

When customers go to order an ESK, they are asked how many light fixtures in their home use light emitting diodes (LEDs), if they have any recessed ceiling lights, and how many bathrooms in their home have showers. Customers can select the items they want; they have to select a positive number of items or zero; the options shown are based on the amount of lighting in their home (including the amount of LED lighting) and the size of their home. Any kit that includes showerheads also includes aerators; this is not something customers can adjust.

In 2018, a phone survey of kit recipients was completed between three and six months after the kit was delivered, to give customers time to install the items in the kit. 99% of kits included lighting, 98% included aerators, and almost all kits included a showerhead or shower wand. The first wave of phone surveys were conducted with kit recipients who received 1.75 gallons-perminute (gpm) showerheads and the second wave of phone surveys were conducted with kit

recipients who received 1.5 gpm showerheads. The 1.75 gpm and 1.5 gpm showerheads looked identical, which enabled us to assess if there were any differences in installation rates between products with different flow rates.

<u>Findings</u>: For lighting measures, 71% of A-lamps and 73% of reflectors were installed at the time of the survey. These numbers jump to 96% and 84% if customers that said they have plans to install A-lamps and reflectors, respectively, are included. Reasons for not installing bulbs included: that existing bulbs are still working, that too many bulbs were provided, and that reflectors were not the right size. Given these results, we expect virtually all A-lamps to be installed, but not all reflectors to be installed. The A-lamp installation rates have been very consistent over time, but reflector installation rates have risen a bit over the past few surveys.

For water measures, installation rates range between 50% and 60%. Shower wands have the highest installation rate (61%; jumps to 87% if customers that said they have plans to install are included). For showerheads, we saw a small difference (5 percentage points) in installation rates between 1.75 gpm (58%) and 1.5 gpm (53%) showerheads, although this difference is not statistically significant. For aerators, 50% of kitchen and 60% of bath aerators were installed at the time of the survey, and not many respondents have plans to install aerators. Reasons for not installing water measures included: that they haven't gotten around to it, that existing equipment is still working, and that aerators did not fit. Water measure installation rates are higher than what we saw in 2016, but are similar to what we saw in 2013.

This year, the survey included a question about what customers planned to do with unused items. The most common answer was "keep in storage". For reflectors, 7 of 10 planned to give them to a friend or family member. A few respondents reported that they plan to donate water measures to charity. Very few said they would throw away or recycle unused items.

The kit ordering process and the items included in the kits met or exceeded expectations in the vast majority of cases. 98% of respondents rated their overall satisfaction a 4 or 5 out of 5. 28% of respondents purchased additional LEDs, and most of those said they were influenced by their experience with the kit. Many respondents reported learning of the kit through word of mouth, Energy Trust's website, and Facebook; we were surprised not to see more mentions of e-mails or respondents' utilities. Respondents reported that they were motivated to order the kits to save money and energy, to try out LEDs, and to get free stuff.

Compared to the general Oregon population, kit respondents were more likely to be homeowners (in detached single-family homes), 25-34 years old, Asian/Pacific Islander, middle income (\$35k-\$75k), and have a college degree or higher education. Kit respondents were less likely to be renters or multifamily dwellers, 18-25 years old, white or Latino, low income (less than \$35k), and have a high school degree or less education.

<u>Energy Trust Take</u>: ESKs provide a positive experience for customers. Installation rates are high for most items; we saw slightly more installations of 1.75 gpm showerheads than 1.5 gpm showerheads, but this difference was not statistically significant. The program may want to specify the size of reflectors included in kits, and offer a maximum of four reflectors.

The program will incorporate the results of the survey in measure updates for 2019, and we plan to continue to monitor installation rates as changes are made to kits.

Alan asked if the program had considered offering discrete choices – e.g., instead of 10, 6 or zero light bulbs, offering any number between 0 and 10. Marshall responded that the program used to offer a fully customizable kit, but that it was a resource-intensive process to build.

Jamie commented that the kits represent an opportunity for customers to try things they might not normally try, and asked how many additional purchases were made by customers. Sarah responded that 457 additional lightbulbs were purchased.

Marshall commented that ESKs have delivered significant quantities of lighting and water measures to customers. The program has shifted to thinking about kits as a customer engagement tool, rather than an energy savings tool; providing customers with a kit can help the program collect customer and site information and characteristics, including an electronic means of communicating with potential future participants, i.e., e-mail addresses. The program expects to deliver about 10,000 kits per year absent marketing.

Ken noted that California recently published a detailed report on lighting, which may be useful to the residential program.

### Multifamily Ductless Heat Pump Billing Analysis Results

Presented by Dan Rubado

<u>Background</u>: This evaluation project has been on the back-burner for a few years; Dan is glad to have something to share now. There are more details in the report; today's presentation is a high-level overview. Andy Eiden and a former intern helped pull data on multifamily buildings, the Existing Multifamily program provided a lot of input on the analysis and report, as did Phil Degens. Our outside reviewers, Ken Agnew of DNV GL and Scott Pigg of Seventhwave Consulting, also reviewed the study and helped shape the analysis.

The Existing Multifamily program's ductless heat pump (DHP) offering began as a pilot in 2009. Measure volume ramped up in 2014. Initial deemed savings were based on evaluated savings from units in single family homes from studies by the Northwest Energy Efficiency Alliance (NEEA) and others; single family savings were de-rated for multifamily heating loads. The deemed numbers have changed a bit over time. The Regional Building Stock Assessment (RBSA) metering study indicated that multifamily heating loads were lower than previously assumed, so we started to question the deemed savings for DHPs. The goal of this analysis was to estimate DHP savings, determine factors that affect savings, and figure out how to move forward with the measure in the Multifamily program.

<u>Methods</u>: The sample of participant buildings was selected from all buildings that had at least one dwelling unit that installed a DHP; there were 148 buildings that had sufficient information to be included in the analysis. The comparison group was drawn from buildings that participated in the program in 2016, installing either a DHP or other significant heating or weatherization measures. Screening criteria were used to remove outliers, buildings with a large number of units, buildings with utility data quality or quantity issues, newly constructed buildings, buildings with large unexplained changes in energy usage, and buildings where less than 10% of units installed a DHP. Comparison group buildings were matched to strata of treatment group buildings and randomly assigned a proxy installation date to identify their pre- and post-periods.

Jamie asked what the criteria were for matching sites. Dan said buildings were matched within region and by building size. Jamie asked if the age of building was used to match, but Dan said there were not enough sites to choose from to use vintage to match as well. Jamie also asked

how matching worked, whether participants were dropped if a comparison site could not be identified and vice versa. Dan said the matching was not one to one; it was based on filling bins defined by region and building size strata.

Energy usage in the pre- and post-periods matched fairly well between the treatment and control groups. The analysis period was 24 months before installation to 12 months after installation. A three-month blackout period around the installation date was used to separate the pre- and post-periods.

The analysis was conducted at the building level using monthly electricity usage data. The analysis compared pre-to-post changes in building electric usage, controlled for differences in weather and number of units in the building, compared changes between participants and the comparison group buildings and normalized savings to a typical weather year and building size. Based on the building-level savings, Dan computed savings per DHP per year. Dan tried several analysis methods to see how stable results were. The methods were: a simple difference of mean usage pre and post, simple linear regression, multivariate linear regression, fixed effects panel regression, multilevel panel regression, and a building-level variable-base degree day (VBDD) model.

Jamie noted that fixed effects has some issues that lead to awkward interpretation of the results, while building-level VBDD type models overstate the certainty about parameter estimates. He has written a paper about an alternative building-level VBDD-type method he recommends that involves adding splines to the regression models.

There was also an analysis of subgroups of buildings, based on a variety of building characteristics and DHP characteristics.

<u>Findings</u>: In comparing the treatment buildings to the comparison group, the treatment group buildings had fewer units (with many duplexes) while comparison group buildings were more likely to have more than four units. Both groups had similar vintages. There were some minor differences in ownership type. Portland Metro sites dominated both groups and the split of electric utilities was similar. The average annual usage in the baseline period was slightly higher for participant buildings at the unit level, but higher for comparison group buildings at the building level due to their larger size.

In terms of DHP system characteristics, there was an average of 1.7 DHPs installed per building (average of 55% of the units in each participant building). About three quarters of installations had one indoor head. Two major manufacturers dominated the systems installed, but a wide variety of contractors installed them, not just a few firms. The average installation cost was \$4,643, the median cost was about \$4,300, and the average deemed savings claimed per DHP was 2,852 kWh per year.

Looking at the results from all six methods (in the table below), most estimates converge around 1,750-1,800 kWh per year, about 20% of total electricity usage, and about 50% of heating energy usage per unit. Dan feels the building-level VBDD model is the most reliable.

Analysis Method	Annual kWh Savings	90% Conf. Interval	% Savings	% Heating Savings
Simple difference in means	960	±930	11%	
Simple linear model	1,120	±920	12%	
Multivariate linear model	1,800	±770	20%	55%
Fixed effects panel model	1,760	±760	18%	50%
Multilevel panel model	1,750	±760	19%	49%
Building-level VBDD models	1,770	±760	20%	47%

#### Multifamily DHP savings by analysis method

Jamie said that based on his work in California, VBDD models understate the amount of savings due to heating, but he has not looked at whether this is similar in Oregon. Dan said that the analysis used both heating and cooling degree-days. Cooling loads were very small – only about 100 kWh per year.

Results from the subgroup analysis should be taken with a grain of salt since many group sizes are small, and there is some correlation between factors. Dan thinks results by building size, though not conclusive, are interesting – larger buildings have higher savings. Number of indoor heads was not a significant factor in determining savings. Buildings with higher baseline energy usage per dwelling unit had higher savings. There were also more savings for DHPs installed in the Portland Metro area than elsewhere, though it is not clear why that would be the case, and there were relatively few units from outside the Metro area. There also appear to be more savings in owner-occupied buildings. There was no significant difference in savings by DHP manufacturer.

<u>Conclusions</u>: The savings are about 1,770 kWh per DHP per year for low-rise multifamily buildings with 2 to 20 dwelling units in the 2013 and 2014 program years. This is a 62% realization rate based on the average deemed savings at that time. The precision of estimates is low, and there is high variability in in the energy usage of these buildings. The study has limitations, but Dan feels fairly confident about the overall estimate (though not the subgroup results). There seem to be higher savings for larger buildings, buildings with a lower percentage of units treated, buildings with higher baseline usage per dwelling unit, owner-occupied dwelling units, and Portland Metro participants.

<u>Recommendations</u>: The program will update deemed savings based on these results, and the next step is to conduct a new study with a larger sample, which is currently underway. This new study will improve reliability of the estimates and allow us to look at possible changes in savings over time. We will collect data that are more detailed on buildings, DHPs and occupants. The study will include both single family and multifamily sites.

Jamie asked if an indicator variable for Portland Metro sites was included in the multilevel model. Dan said it was not, but that is a good idea. Ken noted that the savings do not appear to be higher for multi-head systems, but there should be an impact to cost-effectiveness. Dan said that we do not claim different savings for multi-head systems, but they are more expensive and

it does hurt measure cost-effectiveness. Alan asked how these results would affect the program. Dan said the measure is currently offered under an exception from cost-effectiveness from the OPUC. The new study hopes to identify where and how we can target installations to get higher savings at lower cost.

Dulane noted that buildings with more than 20 units are odd and it makes sense to exclude them from the analysis, but asked if, given the savings potential, the program wants to focus on them. Dan said that there are more of those types of large buildings participating in more recent program years, and we hope to look at those in the future.

Fred said the study shows why it is hard to evaluate savings in multifamily buildings. The estimate of savings of about 50% space heating usage is in line with prior findings, the savings are lower mainly because the heating loads are lower than we thought.

Jackie asked if DHP unit size was used in the analysis. Dan said that he did not have that data, but would have liked to use DHP capacity. Marc asked how row houses were handled in the analysis. Dan said they were treated the same way as stacked units; only the number of units in the building was considered, not their configuration. Warren asked about the installed cost in multifamily units and Dan said that it is slightly lower than for single-family homes.

Ken said the study was worthy of a dissertation. Trying to estimate energy savings in multifamily site is hard because they are complex, but these results seem reliable.

### **Open EE Meter – Automated Residential Impact Analysis Methods**

Presented by Dan Rubado

<u>Background</u>: Evaluation staff are trying to automate some of our residential impact analysis. Open EE is a private company that develops open source software for analysis of energy savings based on utility billing data. We hired them to create a web-based tool to meet our needs. Open EE has developed standardized methods for billing analysis through a stakeholder process.

The objectives of our work with Open EE are to develop standard, automated residential billing analysis methods for quasi-experimental analysis, determine the best way to create comparison groups, identify methodological issues, and recommend a path forward after incorporating feedback from outside experts and this committee.

<u>Methods</u>: Weather normalization methods have been defined by CaITRACK. These methods are similar to the Princeton Scorekeeping Method (PRISM), where energy use is function of base load, heating load, and cooling load. Heating and cooling balance points are tested and selected, then usage is normalized to a typical year.

We wanted to test comparison group selection methods. We obtained gas and electric billing data from 2011 through 2017, as well as program participation data. These were used to replicate a billing analysis on ceiling insulation that we had recently completed.

<u>Findings</u>: The first comparison group tested was comprised of future participants. It has the benefit of being similar to past participants in many ways, but also requires waiting longer to complete analysis and constrains the group sample size. When you compare annual usage for

both groups, they match really well. On a monthly basis, things are close, though usage by the treatment group was always slightly higher than for the comparison group.

The second comparison group was identified through stratified sampling. The treatment group was divided into deciles of annual consumption to create usage bins, which were then filled with random samples of nonparticipants. Compared to future participants, there was a poorer match to the treatment group on annual and monthly energy use.

The third comparison group was created by individually matching each treatment home to five nonparticipating homes with the most similar annual usage. As expected, there was a good match to annual consumption, but noticeable monthly differences (biggest differences in winter and summer).

The last comparison group was created similarly to the third group, but based on monthly usage, rather than annual usage. For this group, the annual and monthly energy usage patterns matched very closely.

Jamie asked if Dan thought about matching on temperature parameters. Dan replied that he did not. Phil said that with Open EE, that would require that you weather-normalize all the nonparticipants ahead of time, rather than just the matched ones, which would be much more time and resource intensive. The matching done here is just based on raw consumption, and it is much faster to normalize 2,000 nonparticipants than 2 million.

Open EE also tested matching within smaller geographic areas: counties, weather stations, and zip codes. As you get more granular in the geographic area, there are pros and cons; you get more similar homes, weather and demographics, but a smaller number from which to sample. We believe the benefits will outweigh the drawbacks, and we are planning to try the zip code level. We also had to decide on a blackout period length, this is the time between the pre- and post-periods. The length could range from a tight period around installation to a full year. Tighter periods should give more accurate results if you have the install date right. Different blackout periods did result in difference in energy savings estimates. Our preference is for a tighter blackout period. There were also some tests of baseline and post period lengths; we did not resolve what lengths are best, but results do differ. Our preference is for 12 months, because it uses the energy consumption data closest to the treatment, though this is not based on empirical evidence. We also experimented with sampling with and without replacement. Jamie said it is statistically acceptable to sample with replacement; Dan feels slightly uncomfortable about sampling with replacement because it re-uses the same nonparticipant multiple times.

As shown in the graph below, different comparison group methods (including different geographic stratification, blackout periods, and analysis periods) produce savings estimates that are different enough that it may be worth always using multiple comparison groups and giving an average or range of the estimates.



Results of various comparison group methods

<u>Conclusions</u>: Individual matching on monthly usage seems to be the best method, though future participants are good too, and may have advantages we did not discuss today. Savings results are relatively close to the Energy Trust estimates despite some difference in methods.

<u>Recommendations</u>: Create comparison groups as above, use zip code-level matching, limit comparison group homes to nonparticipants and possibly future participants, set baseline and post-periods to 12 months each, screen for outliers, and evaluate comparison group equivalence on an ongoing basis to see if the selected procedure continues to work in a wide variety of situations.

Jamie said that matching on months has some complications. He cited a paper by Card and Kruger (1994) about synthetic matching methods. Calendarization does some weird things to energy usage, and can create an extra layer of confusion because of serial correlation of readings.

The next steps are incorporating reviewer feedback, conducting some additional analysis, build the tool, and conducting a side-by-side analysis. Once that work is complete, we can start analyzing measures and plan to start with thermostats. We will continue to refine the tool as needed.

Andy E asked if, given complications with calendarization, we intend to look at interval data from advanced metering infrastructure (AMI). Dan said that there are no plans for that, as it is difficult to get AMI data.

Anna said she would like to get information on the previous methods this work is replacing. Phil said that previous methods were usually VBDD models with a one-year blackout period. Dan noted that our methods have varied a little over time and by measure; part of the reason we are interested in this tool is because it does standardize things.

Marc asked if we have looked at other aspects of Open EE beyond comparison groups. Dan said that we have not, as there is consensus from the CalTRACK work group that the weather normalization methods are right. The methods are similar enough to what we have used in regular billing analysis that it is not worth diving into the minor differences in implementation.

Andy E asked about other use cases for tool and about whether the cost is more or less than the way we have been doing billing analysis. Dan said that the tool should enable us to do a lot more analysis, and we might be able to do billing analysis for multifamily sites with the tool at some point. Mark said that Open EE was chosen through a solicitation for services and their service matched what we were seeking. He is looking forward to being able to do more frequent analysis and program course correction based on results, being able to inform measure development, and being able to analyze savings for new homes. Energy Trust is starting to explore what are called meter-based programs or pay-for-performance; this billing analysis tool would be used as a building block for that, but the program is still under development. Dan said the cost of the tool is a fee per year cost and the tool could do as many analyses as we want. Susan asked if we would save money in the Evaluation budget or reduce the cost of outside reviewers. Dan said that outside reviewers do not cost us much; this tool mainly saves staff time and allows us to do more billing analysis.

### **Attribution for Energy Efficiency Programs**

Presented by Fred Gordon

<u>Background</u>: This discussion has been a long time in the making. There have been several drafts of the paper, which has been reviewed by internal staff and also staff at the Oregon Public Utility Commission (OPUC). The underlying question of this discussion is whether you want to count what you can demonstrate you influenced or what you touched. Over time, it has been getting harder to make the argument for counting what we influenced. Our recommendation is that "what we touched" is perhaps the most practical way to estimate what we influenced, as the job of ascertaining influence through evaluation is getting more difficult.

This discussion is about how we set and report against goals. It trickles into many things– contractor payments, performance measures, etc.– as we are an organization driven by numbers. Fred is presenting some options for going forward.

Fred has talked with several utilities and the Conservation Advisory Council and, so far, the idea of changing to setting goals and reporting savings based on gross savings instead of our current practice of using net savings has some support. He plans to go to several other groups, and is looking to get Evaluation Committee feedback today.

Fred started with definitions of gross savings, free riders, spillover, attribution, market transformation, and net savings.

The logic for reporting net savings when Energy Trust started out was based around load forecasting which was supposed to incorporate what efficiency would happen in the market without program. We wanted to count savings they were not counting. At that time, ODOE had a larger budget for tax credits than we had for incentives, so we had to show whether we made a difference on the margin.

Research methods used to estimate net savings are the Fast Feedback survey, use of market baseline for measures and market transformation frameworks; the methods are selected based on the program design and market situation. Fast Feedback is a quick survey of recent participants and we ask 2-3 questions about what they would have done without the program's help. Our methods for this are simpler than the way others do it. On the use of a market baseline, the example of retail lighting is a good one; it is a buy-down program, and we do not know whom to call to ask free ridership, and they might not even know because it is an upstream incentive. We take the prior year market sales and use that as a baseline for what we get this year. This is usually based on regional data, not just data for our territory. Market transformation is much different and requires a forecast of what the market will look like down the road. Savings are based on speeding the change in the market or making the change larger.

There is a lot of ambiguity in the meaning of high free ridership; it may indicate an unnecessary program, a mature program, or that the participant does not remember or understand the program influence. What you do in response to high free ridership depends on context, not just the number.

In terms of what other program administrators do, more report net savings than gross, but some of those are not using measured free ridership, but instead making assumptions about free ridership values. Some states are shifting to gross. In the Northwest, the majority of utilities use gross because of the Northwest Power and Conservation Council, and the requirements of the I-937 legislation in Washington. Alan asked if Pacific Power uses gross savings; Fred said they do. We report gross savings for NW Natural in WA.

Market transformation is booked separately through NEEA. Anna asked if California mostly reports in net savings. Fred said that California thinks they are using net savings, but there have been many changes in methods over time. Ken also said California thinks they are using net and forecasting market baselines, but utilities are not really able to do it. California thinks reporting net savings is important, but has been more open to changes in the past couple of years, including using market transformation.

A common question is whether it is a big change to go from net to gross savings. About 40% of electric savings and 50% of gas savings get market effects applied to them. The rest are claimed using either a market baseline or market transformation; almost all savings have market effects applied, or are claimed using a market baseline or market transformation. Reported gross savings are about 13% more than net savings for 2012-2016, for both gas and electric, but it is not clear whether the difference is meaningful or primarily reflects the difficulty of evaluating spillover.

There are many longstanding issues with applying market effects. More recently, load forecasts do not necessarily include market-driven efficiency. Utilities are starting to prefer gross savings. The approximate nature of free ridership and spillover causes a lot of internal debate and friction, and it may not be feasible to get estimates that are more precise. This significantly affects staff in programs and in Planning & Evaluation. There are well-documented issues with bias in survey responses about free ridership and spillover.

More recent problems we have encountered with estimating market effects include the following:

• We can't conduct customer surveys for midstream programs (which are becoming more common);

- Survey responses regarding our influence are more ambiguous where there are long-term relationships with customers;
- Many behavioral programs, such as Strategic Energy Management, train customers to perform conservation autonomously, and the objective is for the facility staff to routinely pursue efficiency;
- Tracking is difficult in fast-moving markets; and
- Multiparty initiatives (which may reduce people's ability to accurately assess our influence) are more common.

<u>Options and Recommendations</u>: Options for markets where currently apply market effects are: keep doing things the same way (use net savings); keep using net savings, but consider the circumstantial case for attribution; use gross only where measuring market effects is problematic; change to using gross savings; or change to gross savings plus spillover. Measuring spillover is difficult and expensive, so we usually use an estimate of 1% of gross savings.

Fred feels that the most important question is what is useful to utilities. For that reason, he is recommending using gross savings plus spillover because it is providing the most complete picture of efficiency savings for forecasters. Alternatively, he recommends just gross savings. This recommendation is only for where we are currently applying free ridership and spillover; the change would not affect the use of market baseline or market transformation savings. If we decide to switch to gross savings, we still need to know when to stop offering incentives for measures. We may not be able to use a single method to assess this for every measure or program. In addition, there may be places where we discontinue incentives, but try to keep influencing the market. This needs to be fleshed out and programs would work on this.

Implications of changing to reporting gross savings include consistency with Washington reporting and public utilities. Anna asked when Washington changed to gross savings. Fred thinks they have always done gross. Ken said that I-937 made the Council's methods required for public and investor-owned utilities. That does not mean you cannot estimate free ridership to track program progress. Jamie noted that in California, the Public Utility Commission thought if they did away with net savings, the utilities would do things that were not prudent. Energy Trust has a different reward structure than California utilities. Fred noted that we also have a different relationship with the OPUC. Alan said he does not want to set goals on one type of savings and measure against another. We should use the same type of savings for both goals reporting.

If we were to switch to gross savings, there would be higher savings estimates for some measures or programs and higher utility cost test outcomes for some measures or programs. The total resource cost test outcomes would be unchanged. There would not be much savings on market research, as we would still need to make exit decisions. The change would save significant time spent on debating market effects. It would allow us to focus on more important things, including how to get more savings, and less time on complex calculations with limited meanings. It would also remove the uncertainty associated with customer self-reports.

The next steps involve additional stakeholder engagement. There is no OPUC rule that we have to use net savings, though there is a reference in an old integrated resource planning rule. Fred is not sure if changing how we report savings will require an official docket with the OPUC or a ruling of some kind. Ken thought the requirement to use net savings was in the original contract with OPUC, but it is not in the current contract and may have been spoken and not written. Fred is talking with the OPUC about it. The utilities seem to be on board with switching to gross

savings. This topic will also go to the Board Policy Committee. The changes are significant enough that we propose implementing it for the 2020 budget; it is too much to do for 2019.

Alan said he has advocated for this for years. He supports doing this, and wants to keep tracking free ridership to make sure programs are effective. Mark said he understands Alan's view to be that free ridership should be a feedback mechanism, but not an adjustment to savings. Ken feels uncomfortable with the recommendation to include spillover. Gross savings are hard and imprecise; spillover measurement is even harder and less precise. He is not sure how it would work to include spillover in program goals. Alan agreed with Ken, and said he wants to go with gross savings only. Fred noted that, numerically, spillover is almost immaterial. In the past, this committee has encouraged us to pursue spillover. Fred wants to change to what is most useful for utilities, and is not personally invested in including spillover.

Jamie said that energy efficiency evaluation is a different world than typical program evaluation. In typical evaluation, it would be a cost-benefit analysis that includes non-energy benefits, whereas energy efficiency cost-effectiveness analysis generally does not. Energy efficiency evaluation methods work well for one building or customer, but not for measuring broad program effects. The gaming of programs in California was severe and that drove the desire for free ridership measurement. He thinks we should keep checking free ridership to make sure that gaming is not happening.

Dulane said she heard anxiety about letting go of net savings as it provides a measure of "prudency." She suggested we do not use net savings for that, but instead use a mix of other measures of prudency, and those can be figured out.

#### Meeting adjourned at 3 p.m.

# Sarah will send out a poll to schedule the next meeting for late September or early October 2018.

# PINK PAPER

# **Energy Trust of Oregon**

Executive Summary of Utility Billing Analysis of 2013-2014 Multifamily Ductless Heat Pump Retrofits

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### ACKNOWLEDGEMENTS

A number of Energy Trust of Oregon staff and interns contributed significant work to this study. Phil Degens provided oversight and consultation on the technical aspects of the study. Andy Eiden and Elise Breshears helped define the comparison group and determine the configuration of sites included in the study. Erika Kocioloek, Sarah Castor, Kate Scott, Connor Morrow, and Becky Engel provided input on the analysis methods and the report. Nick Ricciardi at Lockheed Martin provided additional input on the analysis methods.

This study was reviewed by Energy Trust's contracted outside expert reviewers: Ken Agnew of DNV GL and Scott Pigg of Seventhwave. They provided significant input into the analysis methods and helped shape the final product.

### **EXECUTIVE SUMMARY**

Energy Trust of Oregon's Multifamily program launched a pilot to test Ductless Heat Pumps (DHPs) in multifamily buildings beginning in 2009. The measure was moved out of pilot status in 2016 after a preliminary analysis by Lockheed Martin corroborated the initial savings estimates. However, due to challenges in obtaining quality site information and utility billing data, and in conducting billing analysis in multifamily buildings, the energy savings were not rigorously evaluated until now. This study examines electric savings resulting from the installation of DHP systems in electrically heated multifamily buildings in Oregon, using utility billing analysis, across a wide variety of building sizes, vintages and installation scenarios. We quantified the average annual electric savings per DHP system and attempted to determine if there were any differences in energy savings between different types of buildings and DHP systems, especially between small (2-4 unit) and large (5-20 unit) multifamily structures. We selected 148 multifamily buildings that received DHPs in 2013 and 2014 as the treatment group and then selected a comparison group of 174 electrically heated multifamily buildings that participated in the Multifamily program in 2016.

After removing buildings that were unsuitable for analysis, we analyzed 112 treatment buildings and 136 comparison buildings. Treatment buildings used an average of 9,067 kWh per unit per year in the pre-treatment period, while comparison buildings used 8,828 kWh on average. Eighty-two percent of treatment buildings were small, while only 62 percent of comparison buildings were small. Thus, building size was an important difference that we attempted to account for in the analysis. In addition, roughly half of buildings in the study sample were owner-occupied and three-quarters were located in the Portland Metro area.

Several different analysis techniques were used to quantify energy savings using monthly electricity billing data. Electricity savings were found to be 1,768 kWh per year (±757 kWh) per DHP, on average. This equates to 20 percent overall electric savings and 47 percent heating savings. Although, this represents substantial energy savings

for multifamily dwelling units, it is significantly lower than the deemed savings values used during the 2013 and 2014 program years, resulting in a 62 percent realization rate.

Differences in energy savings were found based on building sizes, vintages and installation scenarios. Small buildings appeared to have lower savings than large buildings, contrary to our hypothesis at the outset of the study. Buildings where less than 25 percent of units received a DHP had savings far exceeding that of buildings where 25 percent or more of units received a DHP. Buildings with high baseline electric usage per unit had significantly higher savings per DHP than buildings with lower usage per unit, presenting a good opportunity for targeting. Ownership type also had a major impact on savings per DHP, with owner-occupied condos showing electric savings that were more than eight times higher than renter-occupied buildings. Geographic region also had significant influence, with Portland Metro area buildings saving roughly five times more electricity than non-metro area buildings. On the other hand, DHP systems with multiple indoor heads had very similar electric savings to single head systems. There was also no statistically significant difference between high efficiency DHP systems and lower efficiency systems.

We recommend that Energy Trust use the electric savings of 1,768 kWh per DHP to true-up savings for past program years and to recalibrate the current deemed savings values. In addition, the amount of variation in savings observed in this study is somewhat concerning. We recommend conducting an additional study to see if energy savings are changing over time, and to determine the sources of variability in savings. We recommend another billing analysis with a larger sample of multifamily buildings and more recent DHP projects installed from 2015 to 2017. This study would allow us to produce a more stable savings estimate using a larger sample size and to conduct a more robust analysis of the driving factors influencing DHP savings.

# Tab 7



# **Finance Committee Meeting**

August 30, 2018

### Attending by teleconference

Susan Brodahl – *Finance Committee Chair*, Roger Hamilton, Anne Root and Ernesto Fonseca (joined at 3:15pm)

### Attending at Energy Trust offices

Pati Presnail, Steve Lacey, Peter West and Cheryle Easton from Energy Trust The meeting started at 3:05 pm.

Pati welcomed the group and provided a summary of the agenda.

- 1. July financial statements
  - a. Revenues year to date are 4% above budget.
  - b. Reserves at year end based on the current forecast indicate three utilities will be in the negative. Avista has agreed to provide additional funding in 2018 to correct their shortfall. Steve Lacey will discuss the NW Natural Industrial DSM shortfall with NW Natural in an upcoming meeting. Most likely we will ask the board to allow Cascade's shortfall to be temporarily covered by the contingency reserve. These figures may change when the next forecast is produced.
- 2. 2019-2020 budget schedule highlights
  - a. Steve Lacey provided budget schedule highlights.
  - b. Susan asked if there may be an opportunity for the committee to see the budget on September 21<sup>st</sup> as the OPUC staff are also reviewing it at that time.
  - c. Budget documents will be sent to committee members.
- 3. 2018 forecast as of Q2
  - a. Peter West presented the Q2 forecast of 2018 savings. his information helps inform the 2019 budget. A refresh of the forecast will be completed in October after Q3 is complete.
  - b. Energy Trust is on track in 2018 to meet or exceed efficiency goals for three of the five utilities in Oregon.
  - c. Energy Trust is expected to meet generation goals for both Pacific Power and PGE.
  - d. We are forecasting total expenditure to be slightly under budget, with incentives 1 percent above budget and other costs 2 percent below budget.
- 4. Other business:

a. Pati and Steve informed the committee of the new finance structure. Pati is now the director of finance and is actively recruiting for an accounting manager and filling two other open positions. The former CFO and controller roles have been eliminated. In the new structure, Pati and the finance group report to Steve Lacey and will function as part of the operations group. This creates greater connections to other operations such as IT. Susan commented these sounded like good changes.

Next meeting: October 9, 2018 3:30pm. The agenda will be a review of the 2019 budget in advance of the board workshop.

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# **Notes on July 2018 Financial Statements**

August 23, 2018

#### <u>Revenue</u>

Revenues remain within 4% of budgeted amounts.

	YTD Actual	YTD Budget	YTD Var	<u>YTD %</u>	PY
PGE Efficiency	57,077,161	54,844,737	2,232,424	4%	55,500,694
PGE Renewables	5,081,611	5,007,894	73,717	1%	5,197,759
PAC Efficiency	33,083,516	32,179,576	903,940	3%	34,699,645
PAC Renewables	3,793,013	3,781,950	11,063	0%	3,867,423
NWN	15,896,224	15,655,890	240,334	2%	19,148,339
CNG	1,681,658	1,330,517	351,141	26%	1,921,329
Avista	771,247	674,841	96,406	14%	614,418
Grant Revenue	46,147		46,147	0%	
Investment Income	470,356	130,000	340,356	262%	208,777
Total	117,900,933	113,605,405	4,295,529	4%	121,158,383

#### **Reserves**

We have compiled an early forecast for 2018. The forecast will be refreshed in October. We are on track to reduce reserves from current levels and below last year. Three small utilities are forecast to be underfunded. Avista agrees to provide an additional 96,000 to resolve their shortfall caused by strong results. A few large projects in NWN Industrial territory can easily change this outlook, thus no action is to be taken yet.

<u>Reserves</u>				
	12/31/18	7/31/18	1/1/2018	7/31/17
	forecast	current	beg of year	one year ago
PGE	10,267,390	30,002,142	12,210,374	19,898,684
PacifiCorp	3,796,288	15,201,467	6,211,995	10,979,185
NW Natural	2,363,817	8,717,313	3,527,721	8,032,408
Cascade	(152,218)	1,154,086	262,065	705,273
Avista	(72,262)	(670)	75,716	194,142
NWN Industrial	(569,166)	1,483,760	2,647,086	3,144,879
NWN Washington	407,766	788,376	176,503	302,410
PGE Renewables	9,289,145	9,043,450	7,073,074	6,800,516
PAC Renewables	6,040,444	6,975,792	6,268,078	6,697,815
Program Reserves	31,371,204	73,365,716	38,452,612	56,755,312
Other Reserves	0	27,591	38,710	
<b>Contingency Reserve</b>	5,000,000	5,000,000	5,000,000	5,000,000
Board approved for program loans	1,800,000	1,800,000	800,000	800,000
Contingency Available	3,645,148	3,311,665	4,641,309	4,480,586
Total	40,016,350	81,704,970	48,132,611	66,235,884

### **Expenses**

July spending was \$2.7 million under budget, primarily because incentives were \$1.4 million less than anticipated. Based on forecasts, incentive spending should be in line with budget by year end.



	Total Incentives Year-to-Date 2018			
	2018 Actual	2018 Budget	2017 Actual	
Existing Buildings	7,575,524	8,803,925	9,090,805	
Multifamily Buildings	1,628,047	1,600,574	1,671,623	
New Buildings	4,215,598	5,617,437	4,293,575	
Production Efficiency	6,370,930	6,705,585	6,930,784	
Residential Program	10,814,599	13,483,147	13,497,462	
Washington Programs - All	439,769	425,952	504,227	
Solar	2,751,792	3,450,250	5,262,355	
Other Renewables	1,155,638	1,094,656	2,847,005	
Total Incentives	34,951,898	41,181,527	44,097,837	
Energy Efficiency Only	31,044,467	36,636,621	35,988,476	
## **Investment Status**

The graphs below show the type of investments we hold and the locations where our funds are held. We are investing in short term areas (such as 13 week CDARs) that earn a better yield. We want to ensure cash is available to meet year end demands by late December/early January, but we have some time now to invest.





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

	July 2018	June 2018	December 2017	July 2017	Change from one month ago	Change from Beg. of Year	Change from one year ago
Current Assets							
Cash & Cash Equivalents	38,503,624	42,383,470	52,223,904	42,355,732	(3,879,845)	(13,720,279)	(3,852,107)
Investments	53,799,989	44,811,452	22,721,392	31,226,501	8,988,537	31,078,597	22,573,488
Receivables	50,208	100,062	119,077	(14,766)	(49,854)	(68,869)	64,974
Prepaid Expenses	536,084	507,318	244,442	430,090	28,766	291,642	105,994
Advances to Vendors	1,546,356	2,319,523	2,489,421	1,422,266	(773,166)	(943,065)	124,090
Total Current Assets	94,436,263	90,121,825	77,798,237	75,419,823	4,314,438	16,638,026	19,016,439
Fixed Assets							
Computer Hardware and Software	3,934,165	3,934,165	3,733,082	3,733,082	-	201,082.80	201,083
Software Development in Progress	-	-	183,687		-	(183,687)	-
Leasehold Improvements	595,027	595,027	595,027	326,158	-	-	268,868
Office Equipment and Furniture	819,795	819,795	815,056	815,056	-	4,738.88	4,739
Total Fixed Assets	5,348,986	5,348,986	5,326,852	4,874,296	-	22,134	474,690
Less Depreciation	(4,727,988)	(4,701,357)	(4,442,925)	(4,094,850)	(26,631)	(285,063)	(633,138)
Net Fixed Assets	620,998	647,629	883,926	779,446	(26,631)	(262,928)	(158,448)
Other Assets							
Deposits	237,314	237,314	237,314	237,314	-	-	-
Deferred Compensation Asset	990,737	983,117	972,828	874,139	7,620.28	17,909	116,598
Note Receivable, net of allowance	430,669	430,669	263,669	263,669	-	167,000	167,000
Total Other Assets	1,658,721	1,651,101	1,473,812	1,375,123	7,620.28	184,909	283,598
Total Assets	96,715,981	92,420,554	80,155,975	77,574,393	4,295,427	16,560,007	19,141,589
Current Liabilities							
Accounts Payable and Accruals	10,159,974	8,371,464	29,180,745	8,863,898	1,788,510	(19,020,771)	1,296,076
Salaries, Taxes, & Benefits Payable	982,071	1,033,997	874,594	937,356	(51,926)	107,478	44,716
Total Current Liabilities	11,142,045	9,405,461	30,055,339	9,801,254	1,736,584	(18,913,293)	1,340,792
Long Term Liabilities							
Deferred Rent	1,074,991	1,062,899	990,344	657,252	12,093	84,648	417,739
Deferred Compensation Payable	990,737	983,117	976,378	877,689	7,620.28	14,359	113,048
Other Long-Term Liabilities	3,249	3,249	1,290	2,315	-	1,958.95	934
Total Long-Term Liabilities	2,068,977	2,049,265	1,968,012	1,537,257	19,713	100,966	531,721
Total Liabilities	13,211,023	11,454,726	32,023,351	11,338,510	1,756,297	(18,812,328)	1,872,513
Net Assets							
Unrestricted Net Assets	83,504,959	80,965,828	48,132,624	66,235,883	2,539,130	35,372,335	17,269,076
Total Net Assets	83,504,959	80,965,828	48,132,624	66,235,883	2,539,130	35,372,335	17,269,076
Total Liabilities and Net Assets	96,715,981	92,420,554	80,155,975	77,574,393	4,295,427	16,560,007	19,141,589

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

Operating Activities:         Revenue less Expenses       \$ 11,111,618 \$ 11,785,867 \$ 5,880,943 \$ 6,097,341 \$ 1,847,257 \$ (3,889,820)       2539130 \$ 35         Non-cash items:       Depreciation       60,349       60,436       37,154       35,624       33,910       31,464       26630.93         Receivables       25,330       13,597       (10,052)       (101,297)       89,402       (6,066)       -5248.33	
Revenue less Expenses       \$ 11,111,618 \$ 11,785,867 \$ 5,880,943 \$ 6,097,341 \$ 1,847,257 \$ (3,889,820)       2539130 \$ 35         Non-cash items:       Depreciation       60,349       60,436       37,154       35,624       33,910       31,464       26630.93         Change in Reserve on Long Term Note Loss on disposal of assets       25,330       13,597       (10,052)       (101,297)       89,402       (6,066)       -5248.33	
Non-cash items:         Oppreciation         60,349         60,436         37,154         35,624         33,910         31,464         26630.93           Change in Reserve on Long Term Note Loss on disposal of assets         25,330         13,597         (10,052)         (101,297)         89,402         (6,066)         -5248.33	372,335
Depreciation         60,349         60,436         37,154         35,624         33,910         31,464         26630.93           Change in Reserve on Long Term Note Loss on disposal of assets         25,330         13,597         (10,052)         (101,297)         89,402         (6,066)         -5248.33	
Change in Reserve on Long Term Note Loss on disposal of assets Receivables 25,330 13,597 (10,052) (101,297) 89,402 (6,066) -5248.33	285,568
Receivables 25,330 13,597 (10,052) (101,297) 89,402 (6,066) -5248.33	-
	5,667
Interest Receivable 11,816 701 586 (36,521) 59,170 (27,651) 55102.33	63,203
Advances to Vendors         1,053,629         717,885         (1,549,230)         755,704         755,705         (1,563,795)         773167	943,065
Prepaid expenses and other costs (423,367) (160,906) 52,859 53,228 (29,400) 67,421 -36386	476,551)
Accounts payable (18,224,160) (151,198) (3,016,589) 1,026,311 (486,892) 43,241 1788509 (19	020,778)
Payroll and related accruals 94,882 102,231 (227,298) (11,396) 148,977 58,746 -44306	121,836
Deferred rent and other 12,093 12,092 12,092 12,093 14,051 12,093 12092	86,606
Cash rec'd from / (used in) Operating	
Activities         (6,277,810)         12,380,706         1,180,465         7,831,087         2,432,180         (5,274,367)         5,108,691         17	380,952
Investing Activities:	
Investment Activity (1) 3.011.583 (2.002.711) (8.416.303) (3.992.551) 5.387.728 (16.077.806) -8988537 (31	078.597)
(Acquisition)/Disposal of Capital Assets (2,843) (8,444) (3,397) (7,955)	(22,639)
Cash rec'd from / (used in) Investing	<u> </u>
Activities 3,008,740 (2,011,155) (8,419,700) (3,992,551) 5,379,773 (16,077,806) (8,988,537) (31	101,236)
Cash at beginning of Period         52,223,904         48,954,835         59,324,388         52,085,153         55,923,690         63,735,643         42,383,470         52	223,904
Increase/(Decrease) in Cash (3,269,070) 10,369,552 (7,239,235) 3,838,536 7,811,953 (21,352,173) (3,879,846) (13	720,283)
Cash at end of period         \$ 48,954,835         \$ 59,324,388         \$ 52,085,153         \$ 55,923,690         \$ 63,735,643         \$ 42,383,470         \$ 38,503,624         \$ 38	503,624

(1) As investments mature, they are rolled into the Repo account.

Investments that are made during the month reduce available cash.

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

				Actual						Adjusted Budget		
	January	February	March	April	Мау	June	July	August	September	October	November	December
Cash In:												
Public purpose and Incr funding	18,964,634	21,537,912	17,624,324	17,785,777	15,360,373	12,544,226	13,567,185	13,146,521	13,650,208	14,281,005	12,846,520	15,464,234
Investment Income	48,230	35,414	48,768	21,666	136,385	71,477	171,619	(42,181)	(42,181)	(42,181)	(42,181)	(42,181)
From Other Sources	31,744	20,495	383	(96,406)	95,652	0	(55)					
Total cash in	19,044,608	21,593,822	17,673,475	17,711,037	15,592,410	12,615,703	13,738,749	13,104,340	13,608,027	14,238,824	12,804,339	15,422,053
Cash Out:	(25,325,256)	(9,221,560)	(16,496,406)	(9,879,952)	(13,168,186)	(17,890,069)	(8,630,058)	(13,727,989)	(17,311,404)	(16,499,125)	(17,960,899)	(26,117,062)
Net cash flow for the month	(6,280,648)	12,372,261	1,177,069	7,831,085	2,424,224	(5,274,366)	5,108,691	(623,649)	(3,703,378)	(2,260,302)	(5,156,560)	(10,695,009)
Cash Flow from/to Investments	3,011,583	(2,002,711)	(8,416,303)	(3,992,551)	5,387,728	(16,077,806)	(8,988,537)					
Beginning Balance: Cash & MM	52,223,904	48,954,835	59,324,381	52,085,150	55,923,690	63,735,643	42,383,469	38,503,624	37,879,973	34,176,596	31,916,294	26,759,735
Ending cash & MM	48,954,835	59,324,381	52,085,153	55,923,690	63,735,643	42,383,470	38,503,624	37,879,973	34,176,596	31,916,294	26,759,735	16,064,725
Future Commitments												
Renewable Incentives	8,300,000	8,500,000	6 400 000	4,900,000	5 200 000	7,000,000	7,200,000	7,600,000	7,800,000	8,200,000	8 600 000	8 600 000
Efficiency Incentives	84 300 000	85,700,000	88,200,000	90,600,000	89,500,000	98 400 000	100,700,000	113 600 000	109 200 000	107 000 000	107 000 000	107.000.000
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
	2,000,000	2,200,000	2,230,000	2,230,000	2,220,000	2,230,000	2,500,000	2,000,000	2,500,000	2,300,000	2,300,000	5,000,000
Total Commitments	97,600,000	99,200,000	99,600,000	100,500,000	99,700,000	110,400,000	112,900,000	126,200,000	122,000,000	120,200,000	120,600,000	120,600,000

 Dedicated funds adjustment:
 reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements

 Committed funds adjustment:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Cash reserve:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Excrow:
 dedicated funds set aide in separate bank accounts

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

	2019 Final R2 Projection												
	January	February	March	April	Мау	June	July	September	September	October	November	December	
Cash In:													
Public purpose and Incr funding	15,970,862	20,394,304	20,722,660	17,098,459	14,743,958	13,596,738	14,573,633	13,617,897	14,099,097	15,412,038	13,580,079	16,540,633	
Investment Income	25,000	15,000	15,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	
From Other Sources													
Total cash in	15,995,862	20,409,304	20,737,660	17,113,459	14,763,958	13,616,738	14,593,633	13,637,897	14,119,097	15,432,038	13,600,079	16,560,633	
Cash Out:	(32,987,018)	(11,040,289)	(12,017,485)	(12,649,468)	(12,460,968)	(13,228,580)	(14,957,185)	(12,174,555)	(13,517,924)	(16,641,042)	(17,904,238)	(21,900,335)	
Net cash flow for the month	(16,991,156)	9,369,016	8,720,175	4,463,992	2,302,990	388,158	(363,552)	1,463,343	601,173	(1,209,003)	(4,304,159)	(5,339,702)	
Cash Flow from/to Investments	-		-			-		-	-	-	-	-	
Beginning Balance: Cash & MM	16,064,725	(926,431)	8,442,585	17,162,760	21,626,751	23,929,741	24,317,899	23,954,347	25,417,690	26.018.863	24,809,860	20,505,701	
Ending cash & MM	(926 431)	8,442,585	17,162,760	21.626.751	23,929,741	24.317.899	23,954,347	25.417.690	26.018.863	24,809,860	20.505.701	15,165,998	

dure communents												
Renewable Incentives	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000
Efficiency Incentives	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000
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	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000

 Dedicated funds adjustment:
 reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements

 Committed funds adjustment:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Cash reserve:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Excrow:
 dedicated funds set aide in separate bank accounts

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

		July			YTD				
	Actual	Budget	Budget Variance	Variance %	Actual	Budget	Budget Variance	Variance %	
REVENUES									
Public Purpose Funds-PGE	2,836,007	2,771,526	64,481	2%	22,677,475	22,745,625	(68,150)	0%	
Public Purpose Funds-PacifiCorp	2,100,323	2,156,042	(55,718)	-3%	16,999,639	16,987,947	11,692	0%	
Public Purpose Funds-NW Natural	489,723	507,694	(17,971)	-4%	14,290,102	14,011,791	278,310	2%	
Public Purpose Funds-Cascade	82,229	35,478	46,750	132%	1,681,658	1,330,517	351,141	26%	
Public Purpose Funds-Avista	96,406	96,406	0	0%	771,247	674,841	96,406	14%	
Total Public Purpose Funds	5,604,687	5,567,146	37,542	1%	56,420,121	55,750,722	669,399	1%	
Incremental Funds - PGE	4,963,965	4,865,977	97,988	2%	39,481,297	37,107,007	2,374,291	6%	
Incremental Funds - PacifiCorp	2,315,099	2,336,119	(21,020)	-1%	19,876,890	18,973,579	903,311	5%	
NW Natural - Industrial DSM				-				-	
NW Natural - Washington	683,433	822,049	(138,616)	-	1,606,122	1,644,099	(37,977)	-	
Grant Revenue	5,194		5,194	-	46,147		46,147	-	
Revenue from Investments	116,517	20,000	96,517	483%	470,356	130,000	340,356	262%	
TOTAL REVENUE	13,688,895	13,611,291	77,605	1%	117,900,933	113,605,406	4,295,527	4%	
EXPENSES									
Program Subcontracts	4,199,512	4,927,551	728,039	15%	33,505,446	33,443,648	(61,798)	0%	
Incentives	5,065,257	6,465,335	1,400,079	22%	34,951,898	41,181,527	6,229,630	15%	
Salaries and Related Expenses	1,060,853	1,277,379	216,525	17%	8,529,610	8,800,635	271,025	3%	
Professional Services	576,920	892,122	315,203	35%	3,947,222	6,468,214	2,520,992	39%	
Supplies	3,877	3,958	81	2%	23,332	27,708	4,376	16%	
Telephone	3,881	4,300	419	10%	26,906	30,100	3,194	11%	
Postage and Shipping Expenses	932	2,042	1,109	54%	4,939	14,292	9,353	65%	
Occupancy Expenses	73,475	78,703	5,228	7%	543,297	550,919	7,622	1%	
Noncapitalized Equip. & Depr.	103,275	86,555	(16,720)	-19%	519,645	631,884	112,239	18%	
Call Center	15,382	15,000	(382)	-3%	101,418	105,000	3,582	3%	
Printing and Publications	1,489	1,046	(443)	-42%	11,654	9,821	(1,833)	-19%	
Travel	11,628	19,404	7,777	40%	111,834	135,829	23,994	18%	
Conference, Training & Mtng Exp	16,262	22,808	6,547	29%	100,185	140,158	39,974	29%	
Interest Expense and Bank Fees			0		1712	1,500	(212)	-14%	
Insurance	10,713	9,167	(1,546)	-17%	63,561	64,167	605	1%	
Miscellaneous Expenses	400	250	(150)	-60%	2,896	1,750	(1,146)	-66%	
Dues, Licenses and Fees	5,910	13,548	7,638	56%	83,043	134,315	51,272	38%	
TOTAL EXPENSES	11,149,765	13,819,168	2,669,403	19%	82,528,598	91,741,468	9,212,873	10%	
TOTAL REVENUE LESS EXPENSES	2,539,130	(207,878)	2,747,008	-1321%	35,372,336	21,863,938	13,508,398	62%	

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

		July	/		ҮТD					
	Actual	Actual Prior Year	Prior Year Variance	Variance %	Actual	Actual Prior Year	Prior Year Variance	Variance %		
REVENUES										
Public Purpose Funds-PGE	2,836,007	2,827,107	8,900	0%	22,677,475	23,202,928	(525,453)	-2%		
Public Purpose Funds-PacifiCorp	2,100,323	2,154,685	(54,362)	-3%	16,999,639	17,563,289	(563,650)	-3%		
Public Purpose Funds-NW Natural	489,723	519,777	(30,054)	-6%	14,290,102	14,345,276	(55,175)	0%		
Public Purpose Funds-Cascade	82,229	51,232	30,996	61%	1,681,658	1,921,329	(239,671)	-12%		
Public Purpose Funds-Avista	96,406	30,458	65,948	217%	771,247	614,418	156,829	26%		
Total Public Purpose Funds	5,604,687	5,583,259	21,428	0%	56,420,121	57,647,240	(1,227,120)	-2%		
Incremental Funds - PGE	4,963,965	4,916,925	47,040	1%	39,481,297	37,495,525	1,985,772	5%		
Incremental Funds - PacifiCorp	2,315,099	2,581,999	(266,900)	-10%	19,876,890	21,003,779	(1,126,889)	-5%		
NW Natural - Industrial DSM		2,000,000	(2,000,000)			3,720,596	(3,720,596)			
NW Natural - Washington	683,433	538,367	145,066		1,606,122	1,082,467	523,655	48%		
Grant Revenue	5,194		5,194	-	46,147		46,147	-		
Revenue from Investments	116,517	42,349	74,168	175%	470,356	208,777	261,579	125%		
TOTAL REVENUE	13,688,895	15,662,899	(1,974,004)	-13%	117,900,933	121,158,385	(3,257,451)	-3%		
EXPENSES										
Program Subcontracts	4,199,512	3,987,058	(212,454)	-5%	33,505,446	32,101,941	(1,403,505)	-4%		
Incentives	5,065,257	3,986,263	(1,078,994)	-27%	34,951,898	44,097,837	9,145,939	21%		
Salaries and Related Expenses	1,060,853	1,038,472	(22,381)	-2%	8,529,610	7,774,821	(754,789)	-10%		
Professional Services	576,920	427,518	(149,402)	-35%	3,947,222	2,998,700	(948,522)	-32%		
Supplies	3,877	3,202	(676)	-21%	23,332	18,910	(4,422)	-23%		
Telephone	3,881	6,365	2,483	39%	26,906	32,822	5,916	18%		
Postage and Shipping Expenses	932	768	(164)	-21%	4,939	6,579	1,640	25%		
Occupancy Expenses	73,475	74,176	701	1%	543,297	536,163	(7,135)	-1%		
Noncapitalized Equip. & Depr.	103,275	112,683	9,408	8%	519,645	694,280	174,636	25%		
Call Center	15,382	10,164	(5,218)	-51%	101,418	79,679	(21,739)	-27%		
Printing and Publications	1,489	356	(1,133)	-318%	11,654	3,348	(8,306)	-248%		
Travel	11,628	19,130	7,503	39%	111,834	116,760	4,926	4%		
Conference, Training & Mtng Exp	16,262	18,186	1,924	11%	100,185	119,850	19,665	16%		
Interest Expense and Bank Fees			-		1,712	1,678	(34)	-2%		
Insurance	10,713	8,803	(1,910)	-22%	63,561	61,459	(2,102)	-3%		
Miscellaneous Expenses	400	12,148	11,747.50		2,896	30,099	27,202	90%		
Dues, Licenses and Fees	5,910	13,837	7,927	57%	83,043	121,500	38,457	32%		
TOTAL EXPENSES	11,149,765	9,719,127	(1,430,638)	-15%	82,528,598	88,796,424	6,267,826	7%		
TOTAL REVENUE LESS EXPENSES	2,539,130	5,943,772	(3,404,642)	57%	35,372,336	32,361,961	3,010,375	9%		

#### Energy Trust of Oregon Statement of Functional Expenses For the 7 Months Ending July 31, 2018 (Unaudited)

	Energy Efficiency	Renewable Energy	Solar LMI	Total Program Expenses	Management & General	Communications & Customer Service	Total Admin Expenses	Community Solar Expenses	Total	Budget	Variance	% Var
Program Expenses												
Incentives	31,044,467	3,907,430		34,951,898					34,951,898	41,181,527	6,229,629	15%
Program Management & Delivery	33,284,654	220,792		33,505,446					33,505,446	33,443,648	(61,798)	0%
Payroll and Related Expenses	2,395,425	753,730	29,350	3,178,505	1,481,478	1,156,929	2,638,407	11,119	5,828,031	5,962,288	134,257	2%
Outsourced Services	2,051,224	418,129	11,400	2,480,753	280,392	796,283	1,076,674		3,557,427	5,894,311	2,336,884	40%
Planning and Evaluation	1,581,193	83,550		1,664,743	6,266	104,438	110,704		1,775,448	1,865,981	90,533	5%
Customer Service Management	145,294	75,484		220,778					220,778	240,374	19,596	8%
Trade Allies Network	197,067	22,951		220,019					220,019	226,940	6,921	3%
Total Program Expenses	70,699,324	5,482,067	40,750	76,222,141	1,768,136	2,057,650	3,825,786	11,119	80,059,046	88,815,070	8,756,024	10%
Program Support Costs												
Supplies	5,980	2,053	14	8,047	6,006	2,879	8,885		16,932	20,061	3,129	16%
Postage and Shipping Expenses	1,152	405	3	1,559	966	579	1,545		3,105	11,321	8,216	73%
Telephone	1,351	475	3	1,829	750	672	1,422		3,251	5,091	1,840	36%
Printing and Publications	1,131	180	1	1,312	9,255	259	9,514		10,826	8,133	(2,693)	-33%
Occupancy Expenses	153,832	54,040	377	208,248	85,442	76,482	161,924		370,173	382,269	12,096	3%
Insurance	17,997	6,322	44	24,363	9,996	8,948	18,944		43,307	44,524	1,217	3%
Equipment	1,379	130,792	3	132,174	766	686	1,452		133,626	92,415	(41,211)	-45%
Travel	26,669	8,145	1,203	36,017	22,360	24,268	46,628		82,645	110,046	27,401	25%
Meetings, Trainings & Conferences	20,264	6,150	0	26,414	32,787	5,763	38,550		64,964	88,650	23,686	27%
Interest Expense and Bank Fees					1,712		1,712		1,712	1,500	(212)	-14%
Depreciation & Amortization	20,600	7,237	50	27,887	11,442	10,242	21,683		49,570	93,174	43,604	47%
Dues, Licenses and Fees	31,093	4,845		35,938	9,798	14,431	24,229		60,167	87,039	26,872	31%
Miscellaneous Expenses	1,903	138	1	2,041	218	195	413		2,455	1,214	(1,241)	-102%
IT Services	1,022,249	146,919	997	1,170,166	250,655	206,000	456,654		1,626,820	1,980,962	354,142	18%
Total Program Support Costs	1,305,599	367,700	2,697	1,675,996	442,152	351,405	793,556		2,469,552	2,926,397	456,845	16%
TOTAL EXPENSES	72,004,925	5,849,767	43,447	77,898,137	2,210,285	2,409,054	4,619,340	11,119	82,528,598	91,741,467	9,212,871	10%

OPUC Measure vs. 8%	5.4%
Program Support Costs	1,675,996
Total Admin Exp and Community Solar	4,630,459
Total Support and Administrative	6,306,455
	divided by
Total Utility Revenue (without Int Income)	117,384,430
OPUC %	5.4%

#### ENERGY TRUST OF OREGON Summary of All Units For the 7 Months Ending July 31, 2018

	ENERGY EFFICIENCY									
	PGE	PacifiCorp	Total	NWN Industrial	NW Natural	Cascade	Avista	Oregon Total	NWN WA	ETO Total
REVENUES										
Public Purpose Funding	17,595,864	13,206,626	30,802,490		14,290,102	1,681,658	771,247	47,545,497		47,545,497
Incremental Funding	39,481,297	19,876,890	59,358,188					59,358,188	1,606,122	60,964,310
Grant Revenue										
Contributions										
Revenue from Investments										
TOTAL PROGRAM REVENUE	57,077,161	33,083,516	90,160,678	-	14,290,102	1,681,658	771,247	106,903,685	1,606,122	108,509,807
EXPENSES										
Program Management (Note 3)	2.039.552	1.251.935	3.291.488	96.486	553.855	46.060	49.843	4.037.730	91,925	4,129,655
Program Delivery	15,529,606	9,898,896	25.428.501	363,590	3.269.412	298,808	297,294	29.657.607	225.643	29.883.250
Incentives	16,112,817	9,446,754	25.559.571	575,060	3.781.996	331.511	356,559	30,604,698	439,769	31.044.467
Program Eval & Planning Svcs.	1.313.898	776.403	2.090.304	29.477	274.568	23,707	26.638	2.444.693	91,905	2,536,598
Program Marketing/Outreach	1,122,767	750.411	1.873.178	10.923	405,429	23,480	41,581	2.354.590	42.025	2,396,615
Program Legal Services	-	-	-	-	-		-	_,	-	_,
Program Quality Assurance	10,131.00	8,078.00	18,209.00	-	6,555.00	382.00	554.00	25,700.00	-	25,700.00
Outsourced Services	168,484	113,654	282,138	5,460	42,096	3,098	3,911	336,702	3,975	340,677
Trade Allies & Cust. Svc. Mgmt.	144,689	106,794	251,485	970	78,296	4,743	6,869	342,362	0	342,362
IT Services	508,957	307,704	816,661	11,529	147,575	11,046	13,923	1,000,735	21,515	1,022,250
Other Program Expenses - all	135,472	84,443	219,915	4,711	31,276	2,598	3,010	261,514	21,837	283,351
TOTAL PROGRAM EXPENSES	37,086,373	22,745,072	59,831,450	1,098,206	8,591,058	745,433	800,182	71,066,331	938,594	72,004,925
ADMINISTRATIVE COSTS							~~ ~~ ~			
Management & General (Notes 1 & 2)	1,052,290	645,370	1,697,661	31,161	243,763	21,152	22,705	2,016,440	26,631	2,043,071
Communications & Customer Svc (Notes 1 & 2)	1,146,922	703,408	1,850,331	33,962	265,684	23,054	24,747	2,197,775	29,027	2,226,802
Total Administrative Costs	2,199,212	1,348,778	3,547,992	65,123	509,447	44,206	47,452	4,214,215	55,658	4,269,873
TOTAL PROG & ADMIN EXPENSES	39,285,585	24,093,850	63,379,442	1,163,329	9,100,505	789,639	847,634	75,280,546	994,252	76,274,798
TOTAL REVENUE LESS EXPENSES	17,791,576	8,989,666	26,781,236	(1,163,329)	5,189,597	892,019	(76,387)	31,623,139	611,870	32,235,009
Cumulative Carryover at 12/31/17	12 210 566	6 211 801	18 422 366	2 647 080	3 5 2 7 7 1 6	262.067	75 717	24 034 048	176 506	25 111 445
Net Assets Reattributed from prior year	12,210,300	0,211,001	10,422,300	2,047,003	5,527,710	202,007	75,717	24,554,540	170,000	23,111,443
Change in net assets this year	17 701 576	8 989 666	26 781 236	(1 163 320)	5 189 597	802 010	(76 387)	31 623 130	611 870	32 235 009
Ending Net Assets - Reserves	30.002.142	15,201,467	45,203,602	1,483,760	8,717,313	1,154,086	(670)	56,558,087	788,376	57.346.454
	00,002,142	10,201,401	40,200,002	1,400,700	0,717,010	1,104,000	(0/0)	00,000,001	100,010	07,040,404
Ending Reserve by Category										
Program Reserves (Efficiency and Renewables)	30.002.142	15.201.467	45.203.602	1,483,760	8.717.313	1.154.086	(670)	56,558,087	788.376	57.346.454
Operational Contingency Pool		-, -,	-, -, -=	,	, ,	, . ,				
Emergency Contingency Pool										
TOTAL NET ASSETS CUMULATIVE	30,002,142	15,201,467	45,203,602	1,483,760	8,717,313	1,154,086	(670)	56,558,087	788,376	57,346,454
					-					

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

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

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

#### ENERGY TRUST OF OREGON Summary of All Units For the 7 Months Ending July 31, 2018

PGE         PachfCorp         Total         Solar LMI         Community Solar         Other         All Programs         Approved budget         Change         % Change           REVENUES         Public Purpose Funding Incremental Funding         5,081,611         3,793,013         8,874,624         56,420,121         55,750,721         669,400         1%           Contributions         46,147         470,356         100,000         340,255         223%,625         4%           Contributions         5,081,611         3,793,013         8,874,624         46,147         470,356         110,000         340,255         223%         4%           Program Management (Note 3)         384,800         374,764         780,564         29,350         111,119         4,929,888         5,277,886         348,208         7%           Program Management (Note 3)         384,800         374,764         780,564         29,350         11,119         4,929,888         5,277,886         348,208         7%           Program Management (Note 3)         198,291         139,241         -         -         2,555,656         2,200,248         36,632,294,229         15%           Program Laigh Anset         68,661         173,290         199,271         -         2,555,656		REN	EWABLE ENE	ERGY				TOTAL			
Revenues         5,081,611         3,793,013         8,874,624         56,420,121         55,750,721         669,400         164,47           Contributions         46,147         -         470,356         117,300,933         133,065,462         262%           Contributions         5,081,611         3,793,013         8,874,624         46,147         -         470,356         113,000,33         340,566         262%           Program Management (Note 3)         344,000         374,764         759,556         29,350         111,119         -         4,929,885         5,277,896         348,208         7%           Program Management (Note 3)         344,000         374,756         29,350         11,119         -         4,929,885         5,277,896         348,208         7%           Program Management (Note 3)         125,056         89,903         214,356         -         -         30,982,027         43,983,33         40,93         7%           Program MarkelingOursach         68,951         70,390         139,241         -         -         2,820,148         49,383         40,73,77         28%           Program MarkelingOursach         68,951         70,390         139,241         -         -         2,820,148         9,833		PGE	PacifiCorp	Total	Solar LMI	Community Solar	Other	All Programs	Approved budget	Change	% Change
Date         Purpose Funding         5.081,611         3,793.013         8,874.624         66,401         56,750.721         669,400         116           Grant Revenue         46,147         46,147         46,147         46,147         323,625         656           Carinbuitons         470,356         177,300,353         130,000         340,356         222,67           Revenue         5081,611         3,793.013         8,874,624         46,147         470,356         177,300,353         130,000         340,356         222,77           Revenue         5081,611         3,793.013         8,874,624         46,147         470,356         177,300,353         130,000         340,356         222,77         469,429         7%           Program Management (Note 3)         384,800         374,764         756,567         111,119         -         4,929,888         5,277,896         348,208         7%           Program Management (Note 3)         384,800         374,764         759,507,71         66,801,718         3,902,718         3,902,913         1,918,228         446,147         -         -         2,920,848         5,277,896         348,208         7%           Program Calling Outersch         4,938         1,917,193,920,119,233         1,920	REVENUES										
Incremental Funding         Exception	Public Purpose Funding	5 081 611	3 793 013	8 874 624				56 420 121	55 750 721	669 400	1%
Grant Revenue         46,147         46,147         46,147         46,147         46,147           Revenue fom Investments         70,356         470,356         170,090,933         113,605,406         4,295,527         4%           EXPENSES         Program Management (Note 3)         38,800         374,764         759,564         29,350         11,119         -         4,929,688         5,277,896         346,208         7%           Program Management (Note 3)         198,919         3,907,430         -         -         34,951,987         41,181,526         6,229,629         15%           Program Markeling/Outeach         68,851         70,390         139,241         -         -         2,620,143         3863,324         107,776         25%           Program Markeling/Outeach         68,851         70,390         139,241         -         -         2,620,148         3,680,324         107,377         726         25%         0.008,500         100%         0.008,500         105%	Incremental Funding	3,001,011	5,755,015	0,074,024				60 964 310	57 724 685	3 239 625	6%
Contributions         The first state         The first state         The first state         The first state           Revenue from Investments         5,081,611         3,793,013         8,874,624         46,147         -         470,356         177,306,406         4,295,527         4%           EXPENSE         Program Management (Mote 3)         384,800         374,764         759,564         29,350         11,119         -         4,295,688         5,277,896         348,208         7%           Program Delivery         125,056         89,803         214,553         -         -         34,961,897         41,118,226         6,226,229         15%           Program ManeteingDutread         68,851         198,219         -         -         2,200,148         3,689,241         107,776         29%           Program ManeteingDutread         68,851         11,222         278,889         11,400         -         -         2,500         43,651         29,722         13%           Outsourced Services         166,066         112,222         278,889         11,400         -         -         505,812         64,871,118         6,824,972         13%           Ottac Morgram ManeteingDutread         160,066         112,222         278,813         11,	Grant Revenue				46 147			46 147	01,124,000	46 147	070
Developments         470.356         170.000         340.356         222%           TOTAL PROGRAM REVENUE         5,081,611         3,793,013         8,874,624         46,147         -         470.356         117,900,933         113,605,406         4,295,527         4%           EVPENSE         Program Delively         125,056         89,903         214,956         -         -         30,062,08         25,959,283         (498,945)         -2%           Incentives         1918,239         1989,191         3,907,430         -         -         30,062,08         25,959,283         (498,945)         -2%           Program Legis Pervices         1         188,239         139,241         -         -         2,250,148         369,39,241         1,073,776         29%           Program Duality Assurance         -         -         -         2,570,086         349,583         100%           Ottsourced Services         166,666         12,222         728,889         1,400         -         -         508,133         100%           Ottsourced Services         12,052         278,889         1,400         -         -         506,832         266,418         254,732         18%           Ottsourced Services         12,062	Contributions				40,147			40,147			
TOTAL PROGRAM REVENUE         5,081,611         3,793,013         8,874,624         46,147         -         470,366         117,900,333         113,605,406         4,295,527         4%           EXPENSES         Program Management (Note 3)         384,800         374,764         759,564         29,350         11,119         -         4,029,688         22,577,806         498,028         277,806         498,028         25,077,806         498,028         25,078,028         29,059,283         (498,945)         226         117,900,333         113,605,406         4,295,527         498,         20,014         3,603,040         4,295,527         498,         29,050         111,119         -         4,029,688         22,07,08         28,099,283         (498,945)         226         117,900,333         113,605,406         4,229,527         498,         29,053         117,900,333         113,605,406         4,295,527         498,633         117,900,333         113,605,406         4,295,527         498,633         117,900,333         113,605,406         4,295,527         498,633         117,800,333         113,605,406         42,91,265,333         40,177         41,815,256         6,228,527         15%         117,810         118,210,403,403,403,413,413,413,413,413,413,413,413,413,41	Revenue from Investments						470 356	470 356	130.000	340 356	262%
EXPENSES         Program Management (Nole 3)         384.800         374.764         759,564         29,350         11,119         -         4,929,688         5,277,896         348,208         7%           Program Delivery         125,056         89,909,191         3,007,430         -         -         34,951,897         41,181,526         6,229,623         (458,945)         -2%           Program Eval & Planning Svcs.         41,834         41,716         83,550         -         -         2,833,866         2,902,540         366,684         13%           Program Marketing/Outreach         66,851         70,309         13,92,41         -         -         2,535,866         2,902,540         366,684         13%           Program Quality Assurance         -         -         -         -         2,57,00         49,583         49,583         100%           Outsourced Services         166,666         112,223         278,889         11,400         -         503,986         1,311,152         680,865         2%         00%           Other Program Expenses - all         108,962         111,820         220,781         1,700         -         505,832         565,418         59,566         11%           Total Aministrative Costs	TOTAL PROGRAM REVENUE	5,081,611	3,793,013	8,874,624	46,147	-	470,356	117,900,933	113,605,406	4,295,527	4%
Program Management (Note 3)         384.800         374.764         759.564         29.350         11,119         -         4.929.888         5.277.896         348.208         7%           Program Delayery         125.056         89.903         214.956         89.913         390.7430         -         -         30.082.08         29.950.253         (48.945)         -2%         41.813.556         6.229.629         15%           Program Evel & Planning Svos.         41.831.556         19.93.913         39.97.430         -         -         2.450.146         3.89.924         1.073.776         29%           Program Evel & Planning Svos.         41.831.556         19.323.278.898         1.073.776         2.902.540         3.66.664         103%           Program Quality Assurance         -         -         -         2.57.00         4.96.83         100%           Outsourde Services         166.666         112.223         278.898         1.400         -         1.070.166         1.424.882         28.495         1.070.166         1.424.882         28.495         1.070.166         1.424.882         26.47.182         1.85         1.45         0.66.182         1.65.92         1.522         -         1.400.936         2.56.1.824         1.95         1.65.92	EXPENSES										
Program Dativery         (1,10)         30,008,208         29,599,253         (408,945)         -2%           Incentives         1,11,10         -         -         34,951,907         41,181,526         6,229,623         (408,945)         -2%           Incentives         1,18,239         1,989,191         3,907,430         -         -         -         34,951,907         41,181,526         6,229,623         366,684         13%           Program Warkeling/Outreach         68,851         70,390         139,241         -         -         -         2,5700         44,9583         408,084         13%           Program Quality Assurance         -         -         -         -         -         2,5700         49,583         40,068         168,666         12,223         278,899         14,000         -         -         630,966         1,311,52         680,180         52%           Trade Alles & Cust. Svc. Mgmt.         48,006         50,429         98,435         -         -         -         440,197         461,482         20,686         11%         1170,166         1,424,889         24,732         18%         108,562         116,52         -         -         2,210,285         2,851,789         651,732         19	Program Management (Note 3)	384 800	374 764	759 564	29.350	11 119	-	4 929 688	5 277 896	348 208	7%
Incentive         1.918.239         1.989.191         3.907.430         -         -         34.951.897         41.181.536         6.239.820         1557           Program Eval & Planning Svs.         41.834         41.716         83.550         -         -         -         2.620.148         3.683.224         1.073.776         29%           Program Eval & Planning Svs.         41.834         41.716         83.550         -         -         -         2.620.148         3.683.224         1.073.776         29%           Program Legal Services         -         -         -         -         2.57.00         49.583         49.583         100%           Outsourced Services         166.666         112.223         278.889         11.400         -         -         630.966         1.311.152         680.186         52%           Other Program Expenses - all         1068.962         112.822         20.855         4%         59.561         159.561         11%           TOTAL PROGRAM EXPENSES         2.937.124         2.912.645         5.849.767         43.447         11.119         -         2.210.285         2.831.789         621.503         22%           Communications & Customer Svc (Notes 1 & 2)         0.90.913         90.160	Program Delivery	125 056	89 903	214 958	20,000	-	-	30 098 208	29 599 263	(498 945)	-2%
Program Eval & Planning Svcs.       141834       141716       603520       -       -       2620,148       3,603,924       1,073,776       29%         Program Markeing/Outreach       66,851       70,390       139,241       -       -       -       2,553,856       2,002,448       1,803,924       1,073,776       29%         Program Quality Assurance       -       -       -       -       -       -       2,553,856       2,002,448       1,804       1,903       1,004       1,013       1,003       1,004       1,013       1,003       1,003       2,01,803       1,014,848       2	Incentives	1 918 239	1 989 191	3 907 430	-	-	-	34 951 897	41 181 526	6 229 629	15%
Program Marketing/Outreach Program Legal Services         68,851         70,390         139,241         -         -         -         2,535,856         2,902,540         386,684         139,590           Program Legal Services         -         -         -         -         -         0         3,500         3,500         100%           Program Legal Services         166,666         112,223         278,889         1,400         -         -         630,966         1,311,152         680,186         52%           Trade Alles Scuts Xx, Mgmt.         48,006         50,429         98,435         -         -         440,0797         461,482         20,685         4%           Other Program Expenses - all         108,962         111,820         20,781         1,700         -         -         505,532         565,118         59,586         11%           Communications & Costomer Svc (Notes 1 & 2)         83,197         82,495         165,692         1,522         -         -         2,210,285         2,831,789         621,503         22%           Communications & Customer Svc (Notes 1 & 2)         90,0160         181,074         1,178         -         2,409,054         2,438,500         29,446         1%           Communications & Cust	Program Eval & Planning Sycs	41 834	41 716	83 550	-	-	-	2 620 148	3 693 924	1 073 776	29%
Togram Lagar Services       1	Program Marketing/Outreach	68 851	70 390	130 241	_	_	_	2,525,856	2 902 540	366 684	13%
Togam Logicality Assurance       -       -       -       -       -       -       -       -       0.9,563       -       0.9,563       100%         Outsourced Services       166,666       112,223       278,889       11,400       -       -       630,966       1,311,152       680,186       52%         Other Program Expenses - all       108,962       111,820       220,781       1,700       -       -       1,710,166       1,424,898       254,732       18%         Other Program Expenses - all       108,962       118,20       220,781       1,700       -       -       505,832       565,418       59,586       11%         TOTAL PROGRAM EXPENSES       2,937,124       2,912,645       5,849,767       43,447       11,119       -       2,400,654       2,438,500       29,446       1%         Communications & Customer Svc (Notes 1 & 2)       0,913       90,160       181,074       1,178       -       2,400,654       2,438,500       29,446       1%         Total Administrative Costs       3,111,234       3,085,300       6,196,533       46,147       11,119       -       82,528,598       91,741,468       9,212,872       10%         Total Administrative Costs       1,970,377 <td< td=""><td>Program Legal Services</td><td>-</td><td>-</td><td>-</td><td>-</td><td>_</td><td></td><td>2,000,000</td><td>2,302,540</td><td>3 500</td><td>100%</td></td<>	Program Legal Services	-	-	-	-	_		2,000,000	2,302,540	3 500	100%
Outsourced Services       166,666       112,223       278,889       11,400       -       -       600,966       1,311,150       680,186       52%         Trade Allies & Cust. Svc. Mgmt.       40,006       50,429       98,435       -       -       -       440,797       461,482       20,085       4%         Other Program Expenses - all       108,962       111,820       220,781       1,700       -       -       505,832       565,418       59,586       11%         Other Program Expenses - all       108,962       111,820       220,781       1,700       -       -       505,832       565,418       59,586       11%         Other Program Expenses - all       108,962       111,820       220,781       1,700       -       -       505,832       565,418       59,586       11%         Communications & Customer Svc (Notes 1 & 2)       9,913       90,100       181,074       1,178       -       2,240,9054       2,438,500       2,9466       1%         Total Administrative Costs       3,111,234       3,085,300       6,196,533       46,147       11,119       -       48,193,303       5,270,285       21,863,937       13,508,397       62%         Total Administrative Costs       1,970,377	Program Quality Assurance	-		-	-	-	-	25 700	49 583	49 583	100%
Outsout de Construct Constant Construction of the constructin of the construction of the construction of the constr	Outsourced Services	166 666	112 223	278 889	11 400			630,966	1 311 152	680 186	52%
Total 2000 000, 000, 000, 000, 000, 000, 000	Trade Allies & Cust Svc Mamt	48,006	50 / 20	98 / 35				440 797	461 482	20 685	1%
In United and State Sta	IT Services	74 710	72 200	1/6 010	997			1 170 166	1 / 2/ 808	254 732	18%
Outson toglanity         Display         Display <thdisplay< th="">         Display         <thdisplay< th=""></thdisplay<></thdisplay<>	Other Program Expenses - all	108 962	111 820	220 781	1 700			505 832	565 418	59 586	10%
ADMINISTRATIVE COSTS           Management & General (Notes 1 & 2) Communications & Customer Svc (Notes 1 & 2) Total Administrative Costs         83,197         82,495         165,692         1,522         -         -         2,210,285         2,831,789         621,503         22%           Yotal Administrative Costs         90,913         90,160         181,074         1,178         -         -         2,409,054         2,438,500         29,446         1%           Total Administrative Costs         174,110         172,655         346,766         2,700         -         -         4,619,339         5,270,289         650,950         12%           TOTAL PROG & ADMIN EXPENSES         3,111,234         3,085,300         6,196,533         46,147         11,119         -         82,528,598         91,741,468         9,212,872         10%           TOTAL REVENUE LESS EXPENSES         1,970,377         707,713         2,678,091         -         (11,119)         470,356         35,372,335         21,863,937         13,508,397         62%           Net Assets Reattributed from prior year         -         -         (11,119)         470,356         35,372,335         21,863,937         13,508,398         62%           Ending Net Assets - Reserves         9,043,450         6,975,792	TOTAL PROGRAM EXPENSES	2,937,124	2,912,645	5,849,767	43,447	11,119	-	77,909,258	86,471,182	8,561,924	10%
Number Not Revense         83,197         82,495         165,692         1,522         -         -         2,210,285         2,831,789         621,503         22%           Communications & Customer Svc (Notes 1 & 2)         90,913         90,160         181,074         1,178         -         -         2,2409,054         2,438,500         29,446         1%           Total Administrative Costs         174,110         172,655         346,766         2,700         -         -         4,619,339         5,270,289         650,950         12%           TOTAL PROG & ADMIN EXPENSES         3,111,234         3,085,300         6,196,533         46,147         11,119         -         82,528,598         91,741,468         9,212,872         10%           TOTAL REVENUE LESS EXPENSES         1,970,377         707,713         2,678,091         -         (11,119)         470,356         35,372,335         21,863,937         13,508,397         62%           Net Assets Reattributed from prior year         -         .         (11,119)         470,356         35,372,335         21,863,937         13,508,398         62%           Change in net assets this year         1,970,377         707,713         2,678,091         -         (11,119)         470,356         35,372,335											
Maragenient & General (Notes 1 & 2)       53,191       52,193       105,092       1,322       -       -       2,210,203       2,303       22,403       22,403       22,403       22,403       22,403       22,403       24,403	Management & Constral (Nation 1 & 2)	92 107	92 405	165 602	1 5 2 2			2 210 295	2 021 700	621 502	220/
Communications we customer size (votes + 4/2)       30,913       90,913       90,910       181,074       1,175       -       -       2,409,034       2,435,000       29,445       176         Total Administrative Costs       174,110       172,655       346,766       2,700       -       -       4,619,339       5,270,289       650,950       12%         TOTAL PROG & ADMIN EXPENSES       3,111,234       3,085,300       6,196,533       46,147       11,119       -       82,528,598       91,741,468       9,212,872       10%         TOTAL REVENUE LESS EXPENSES       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,397       62%         NET ASSETS - RESERVES       7,073,073       6,268,079       13,341,154       -       38,710       9,641,309       48,132,624       43,871,177       4,261,447       10%         Net Assets Reattributed from prior year       -	Communications & Customer Suc (Notes 1 & 2)	03,197	02,495	100,092	1,522	-	-	2,210,200	2,031,709	021,503	22%
Total Administrative Costs       172,035       340,766       2,700       -       -       4,619,335       3,210,285       630,930       12%         TOTAL PROG & ADMIN EXPENSES       3,111,234       3,085,300       6,196,533       46,147       11,119       -       82,528,598       91,741,468       9,212,872       10%         TOTAL REVENUE LESS EXPENSES       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,397       62%         NET ASSETS - RESERVES       -       7,073,073       6,268,079       13,341,154       -       38,710       9,641,309       48,132,624       43,871,177       4,261,447       10%         Net Assets Reattributed from prior year       -       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,398       62%         Ending Net Assets - Reserves       9,043,450       6,975,792       16,019,245       -       27,591       10,111,665       83,504,958       65,735,114       17,769,844       27%         Operational Contingency Pool       5,001,000       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000	Total Administrative Costs	90,913	90,160	246 766	2 700	-	-	2,409,054	2,430,500	29,440	170
TOTAL PROG & ADMIN EXPENSES       3,111,234       3,085,300       6,196,533       46,147       11,119       -       82,528,598       91,741,468       9,212,872       10%         TOTAL REVENUE LESS EXPENSES       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,397       62%         NET ASSETS - RESERVES	Total Administrative Costs	174,110	172,055	340,700	2,700	-		4,019,339	5,270,289	650,950	12 /0
TOTAL REVENUE LESS EXPENSES       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,397       62%         NET ASSETS - RESERVES       Cumulative Carryover at 12/31/17       7,073,073       6,268,079       13,341,154       -       38,710       9,641,309       48,132,624       43,871,177       4,261,447       10%         Net Assets Reattributed from prior year       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,398       62%         Change in net assets this year       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,398       62%         Ending Net Assets - Reserves       9,043,450       6,975,792       16,019,245       -       27,591       10,111,665       83,504,958       65,735,114       17,769,844       27%         Program Reserves (Efficiency and Renewables)       9,043,450       6,975,792       16,019,245       -       27,591       73,393,290       5,111,665       5,111,665       5,111,665       5,111,665       5,111,665       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000	TOTAL PROG & ADMIN EXPENSES	3,111,234	3,085,300	6,196,533	46,147	11,119	-	82,528,598	91,741,468	9,212,872	10%
NET ASSETS - RESERVES           Cumulative Carryover at 12/31/17         7,073,073         6,268,079         13,341,154         -         38,710         9,641,309         48,132,624         43,871,177         4,261,447         10%           Net Assets Reattributed from prior year         1,970,377         707,713         2,678,091         -         (11,119)         470,356         35,372,335         21,863,937         13,508,398         62%           Ending Net Assets - Reserves         9,043,450         6,975,792         16,019,245         -         27,591         10,111,665         83,504,958         65,735,114         17,769,844         27%           Ending Reserve by Category         9,043,450         6,975,792         16,019,245         -         27,591         73,393,290         5,111,665         5,111,665         5,111,665         5,111,665         5,111,665         5,111,665         5,111,665         5,111,665         5,000,000         5,000,0	TOTAL REVENUE LESS EXPENSES	1,970,377	707,713	2,678,091	-	(11,119)	470,356	35,372,335	21,863,937	13,508,397	62%
Cumulative Carryover at 12/31/17       7,073,073       6,268,079       13,341,154       -       38,710       9,641,309       48,132,624       43,871,177       4,261,447       10%         Net Assets Reattributed from prior year       -       -       -       -       -       -       10%         Change in net assets this year       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,398       62%         Ending Net Assets - Reserves       9,043,450       6,975,792       16,019,245       -       27,591       10,111,665       83,504,958       65,735,114       17,769,844       27%         Ending Reserve by Category       Program Reserves (Efficiency and Renewables)       9,043,450       6,975,792       16,019,245       -       27,591       73,393,290       5,111,665       5,111,665       5,111,665       5,111,665       5,111,665       5,111,665       5,111,665       5,111,665       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       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000       5,000,000 <td< td=""><td>NET ASSETS - RESERVES</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	NET ASSETS - RESERVES										
Net Assets Realtributed from prior year       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,398       62%         Ending Net Assets - Reserves       9,043,450       6,975,792       16,019,245       -       27,591       10,111,665       83,504,958       65,735,114       17,769,844       27%         Ending Reserve by Category       9,043,450       6,975,792       16,019,245       -       27,591       73,393,290       5,111,665       5,111,665       5,111,665       5,111,665       5,111,665       5,111,665       5,000,000 <t< td=""><td>Cumulative Carryover at 12/31/17</td><td>7 073 073</td><td>6 268 079</td><td>13 341 154</td><td>-</td><td>38 710</td><td>9 641 309</td><td>48 132 624</td><td>43 871 177</td><td>4 261 447</td><td>10%</td></t<>	Cumulative Carryover at 12/31/17	7 073 073	6 268 079	13 341 154	-	38 710	9 641 309	48 132 624	43 871 177	4 261 447	10%
Change in net assets this year       1,970,377       707,713       2,678,091       -       (11,119)       470,356       35,372,335       21,863,937       13,508,398       62%         Ending Net Assets - Reserves       9,043,450       6,975,792       16,019,245       -       27,591       10,111,665       83,504,958       65,735,114       17,769,844       27%         Ending Reserve by Category       9,043,450       6,975,792       16,019,245       -       27,591       73,393,290       5,111,665       5,111,665       5,111,665       5,111,665       5,000,000       5,000,0	Net Assets Reattributed from prior year	1,010,010	0,200,070	10,041,104		00,710	0,041,000		40,011,111	4,201,447	1070
Indige influences in sycal       1,50,97       10,713       2,00,001       1       10,000,000       21,000,000       21,000,000       32,000,000         Ending Net Assets - Reserves       9,043,450       6,975,792       16,019,245       -       27,591       10,111,665       83,504,958       65,735,114       17,769,844       27%         Ending Reserve by Category       9,043,450       6,975,792       16,019,245       -       27,591       73,393,290         Program Reserves (Efficiency and Renewables)       9,043,450       6,975,792       16,019,245       -       27,591       73,393,290         Derational Contingency Pool       5,111,665       5,111,665       5,111,665       5,111,665       5,000,000         Emergency Contingency Pool       5,000,000       5,000,000       5,000,000       5,000,000         TOTAL NET ASSETS (CUMULATIVE       9.043,450       6.975,792       16,019,245       -       27,591       10,111,665       5,111,61	Change in net assets this year	1 970 377	707 713	2 678 001	_	(11 110)	470 356	35 372 335	21 863 937	13 508 308	62%
Ending Reserve by Category         9,043,450         6,975,792         16,019,245         -         27,591         73,393,290           Operational Contingency Pool         5,111,665         5,111,665         5,111,665         5,100,000         5,000,000         5,000,000         5,000,000         5,000,000         73,593,114         17,769,844         27%	Ending Net Assets - Reserves	9,043,450	6,975,792	16,019,245	-	27,591	10,111,665	83,504,958	65,735,114	17,769,844	27%
Program Reserves (Efficiency and Renewables)         9,043,450         6,975,792         16,019,245         -         27,591         73,393,290           Operational Contingency Pool         5,111,665         5,111,665         5,111,665         5,111,665         5,000,000         5,000,000         5,000,000         5,000,000         5,000,000         5,000,000         73,593,114         17,769,844         27%	Ending Reserve by Category										
Operational Contingency Pool         5,043,450         6,973,792         10,019,245         -         27,591         73,939,290           Operational Contingency Pool         5,111,665         5,111,665         5,000,000         5,000,000         5,000,000         5,000,000         5,000,000         5,000,000         27,591         10,111,665         83,504,962         65,735,114         17,769,844         27%	Program Reserves (Efficiency and Renewables)	9 043 450	6 975 702	16 019 245		27 501		73 393 200			
Contingency Pool         5,11,005         5,11,005         5,11,005         5,11,005         5,11,005         5,000,000           Emergency Contingency Pool         5,000,000         5,000,000         5,000,000         5,000,000         27,591         10,111,665         83,504,962         65,735,114         17,769,844         27%	Operational Contingency Pool	3,043,430	0,813,182	10,013,240	-	21,391	5 111 665	5 111 665			
Einergenzy Contingenzy Foor 5,000,000 3,000,000 5,000,000 5,000,000 5,000,000 5,000,000	Emergency Contingency Pool						5,000,000	5,000,000			
	TOTAL NET ASSETS CUMULATIVE	9.043.450	6.975.792	16.019.245	-	27,591	10.111.665	83.504.962	65.735.114	17.769.844	27%

#### Energy Trust of Oregon Program Expense by Service Territory For the 7 Months Ending July 31, 2018 (Unaudited)

	PGE	Pacific Power	Subtotal Elec.	NWN Industrial	NW Natural Gas	Cascade	Avista	Subtotal Gas	Oregon Total	NWN WA	Solar LMI	Community Solar	ETO Total	YTD Budget	Variance	% Var
Energy Efficiency																
Commercial																
Existing Buildings	\$10,249,703	\$6,580,160	\$16,829,863	\$566,100	\$1,369,239	\$193,582	\$221,914	\$2,350,836	\$19,180,699	\$383,656			\$19,564,355	\$21,686,486	\$2,122,131	10%
Multifamily Buildings	3,435,872	1,045,038	4,480,910	2,676	397,496	14,958	64,415	479,545	4,960,455				4,960,455	5,196,748	236,293	5%
New Buildings	6,161,421	2,283,868	8,445,289	15,221	897,001	117,975	59,382	1,089,578	9,534,867				9,534,867	10,994,373	1,459,506	13%
NEEA	909,489	686,107	1,595,597		78,821	8,467		87,288	1,682,885				1,682,885	1,422,877	(260,008)	-18%
Total Commercial	20,756,486	10,595,173	31,351,659	583,998	2,742,557	334,982	345,711	4,007,247	35,358,906	383,656	-	-	35,742,562	39,300,484	3,557,922	9%
Industrial																
Production Efficiency	8,441,080	5,515,141	13,956,221	579,332	307,032	78,201	30,942	995,506	14,951,727				14,951,727	16,187,424	1,235,697	8%
NEEA	31,634	23,868	55,502						55,502				55,502	312,019	256,517	82%
Total Industrial	8,472,714	5,539,008	14,011,723	579,332	307,032	78,201	30,942	995,506	15,007,229		-	-	15,007,229	16,499,443	1,492,214	9%
Residential																
Residential Combined	8,690,691	6,929,412	15,620,103		5,572,403	325,055	470,982	6,368,439	21,988,542	610,597	-	-	22,599,139	25,948,453	3,349,314	13%
NEEA	1,365,694	1,030,258	2,395,952		478,513	51,401		529,915	2,925,867				2,925,867	2,995,783	69,916	2%
Total Residential	10,056,385	7,959,670	18,016,055		6,050,916	376,456	470,982	6,898,354	24,914,409	610,597	-	-	25,525,006	28,944,236	3,419,230	12%
Energy Efficiency Program Costs	39,285,585	24,093,850	63,379,442	1,163,329	9,100,505	789,639	847,634	11,901,107	75,280,544	994,252	-	-	76,274,796	84,744,163	8,469,367	10%
Renewables																
Solar Electric (Photovoltaic)	2,102,235	2,208,566	4,310,801						4,310,801		46,147		4,356,948	5,087,239	730,291	14%
Other Renewable	1,008,997	876,736	1,885,733						1,885,733				1,885,733	1,910,065	24,332	1%
Renewables Program Costs	3,111,234	3,085,300	6,196,533						6,196,534		46,147	-	6,242,681	6,997,304	754,623	11%
Community Solar Development												11,119	11,119		(11,119)	
Cost Grand Total	42,396,819	27,179,150	69,575,975	1,163,329	9,100,505	789,639	847,634	11,901,107	81,477,078	994,252	46,147	11,119	82,528,596	91,741,468	9,212,874	10%

#### Energy Trust of Oregon Administrative Expenses For the 7 Months Ending July 31, 2018 (Unaudited)

	MANAGEMENT & GENERAL				COMMUNICATIONS & CUSTOMER SERVICE							
	QUARTERLY			YTD		QUARTERLY			YTD			
	ACTUAL	BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE
EXPENSES												
Outsourced Services	\$26,056	\$251,079	\$225,023	\$268,150	\$705,935	\$437,785	\$143,796	\$341,500	\$197,704	\$796,283	\$796,833	\$550
Legal Services		6,250	6,250	12,242	14,583	2,342						
Salaries and Related Expenses	174,044	703,753	529,709	1,481,478	1,572,742	91,264	149,750	480,828	331,077	1,156,929	1,121,931	(34,998)
Supplies	166	725	559	2,878	1,692	(1,187)		250	250	80	583	503
Postage and Shipping Expenses	212	750	538	326	1,750	1,424				7		(7)
Printing and Publications	1,310	1,125	(185)	8,971	2,625	(6,346)				4	2,500	2,496
Travel	1,858	13,850	11,992	22,343	32,317	9,974	2,537	12,500	9,963	24,253	29,167	4,913
Conference, Training & Mtngs	7,107	13,250	6,143	32,771	30,917	(1,854)	831	5,500	4,669	5,749	12,833	7,084
Interest Expense and Bank Fees				1,712	1,500	(212)						
Dues, Licenses and Fees	435	9,022	8,587	9,798	29,932	20,134	505	4,500	3,995	14,431	10,500	(3,931)
Shared Allocation (Note 1)	17,075	54,461	37,386	112,698	125,991	13,293	13,800	44,759	30,959	100,881	103,545	2,665
IT Service Allocation (Note 2)	32,894	116,822	83,928	250,655	305,219	54,565	27,034	96,010	68,976	206,000	250,844	44,844
Planning & Eval	721	2,825	2,103	6,266	6,586	320	12,023	47,076	35,053	104,438	109,764	5,325
TOTAL EXPENSES	261,878	1,173,912	912,034	2,210,285	2,831,789	621,501	350,276	1,032,922	682,646	2,409,054	2,438,500	29,446

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

Administrative Expenses 1st Month of Quarter









# PINK PAPER

# Energy Trust of Oregon Contract Status Summary Report

For contracts with costs through: 8/1/2018

Page 1 of 5

CONTRACTOR	Description	City	EST COST	Actual TTD	Remaining	Start	End
Administration							
	Admin	istration Total:	13,280,391	5,320,499	7,959,892		
Communications							
	Commur	nications Total:	5,690,490	3,389,820	2,300,670		
Energy Efficiency							
Northwest Energy Efficiency	Regional EE Initiative Agmt	Portland	36,142,871	24,742,574	11,400,297	1/1/2015	7/1/2020
ICF Resources, LLC	2018 BE PMC	Fairfax	15,616,683	8,458,198	7,158,485	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Residential PMC	Austin	8,483,204	4,647,783	3,835,421	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 NBE PMC	Austin	6,206,575	3,679,502	2,527,073	1/1/2018	12/31/2018
Northwest Energy Efficiency Alliance	Regional Gas EE Initiative	Portland	5,864,530	2,810,053	3,054,477	1/1/2015	7/1/2020
Lockheed Martin Corporation	2018 MF PMC	Grand Prairie	4,655,000	2,424,044	2,230,956	1/1/2018	12/31/2018
Energy 350 Inc	PDC - PE 2018	Portland	3,199,704	1,718,259	1,481,445	1/1/2018	12/31/2018
Intel Corporation	EE Project Incentive Agmt	Hillsboro	2,400,000	0	2,400,000	11/13/2015	12/31/2019
TRC Engineers Inc.	2018 EPS New Const PDC	Irvine	1,946,406	1,066,092	880,314	1/1/2018	12/31/2018
Evergreen Consulting Group, LLC	PE Lighting PDC 2018	Tigard	1,875,000	1,089,828	785,172	1/1/2018	12/31/2018
Northwest Power & Conservation Council	RTF Funding Agreement		1,825,000	1,349,096	475,904	2/25/2015	12/31/2019
Cascade Energy, Inc.	PE Lighting PDC 2018	Walla Walla	1,823,250	1,026,141	797,109	1/1/2018	12/31/2018
RHT Energy Inc.	PDC - PE 2018	Medford	1,665,704	926,593	739,111	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Retail PDC	Austin	1,645,112	906,179	738,933	1/1/2018	12/31/2018
SBW Consulting, Inc.	PE Program Impact Evaluation	Bellevue	573,000	557,152	15,848	5/1/2016	8/31/2018
Craft3	Loan Agreement	Portland	500,000	167,000	333,000	1/1/2018	12/31/2019
Pivotal Energy Solutions LLC	License Agreement	Gilbert	490,500	249,237	241,263	3/1/2014	12/31/2019
EnergySavvy Inc.	Optix Engage Online Audit Tool	Seattle	467,000	253,125	213,875	6/1/2016	5/31/2020
Michaels Energy, Inc.	NBE '15 & '16 Impact Eval	La Crosse	425,000	166,137	258,863	3/5/2018	3/1/2019
KEMA Incorporated	EB & SEM 2017 Evaluation	Oakland	350,000	112,038	237,962	4/10/2018	5/30/2019
Balanced Energy Solutions LLC	New Homes QA Inspections	Portland	321,700	154,282	167,418	4/27/2015	12/31/2018
Craft3	Loan Agreement	Portland	300,000	300,000	0	6/1/2014	6/20/2025
ICF Resources, LLC	2018 BE PMC - WA	Fairfax	258,286	133,436	124,850	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Residential PMC - WA	Austin	238,129	114,768	123,361	1/1/2018	12/31/2018
CLEAResult Consulting Inc	2018 Residential PMC - CustSvc	Austin	174,000	101,418	72,582	1/1/2018	12/31/2018
ICF Resources, LLC	2018 BE PMC - DSM	Fairfax	161,119	73,789	87,330	1/1/2018	12/31/2018
Evergreen Economics	2018 EB Process Evaluation	Portland	150,000	14,298	135,703	5/14/2018	3/31/2019
Open Energy Efficiency, Inc.	Automated Meter Data Analysis	Mill Valley	150,000	68,490	81,510	1/1/2018	12/31/2018
The Cadmus Group LLC	Residential DHP Study	Portland	140,000	46,548	93,452	4/18/2018	12/31/2018

# Energy Trust of Oregon Contract Status Summary Report

# For contracts with costs through: 8/1/2018

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273       7/1/2018         349       4/2/2018         25       1/2/2018         23       2/15/2018         71       5/22/2017         29       1/1/2018         51       6/15/2014         36       10/17/2014         18       10/15/2014	10/15/2018 6/14/2019 7/9/2018 5/31/2019 12/31/2018 9/28/2018 12/31/2019
349         4/2/2018           25         1/2/2018           23         2/15/2018           71         5/22/2017           29         1/1/2018           51         6/15/2014           36         10/17/2014           18         10/15/2014	6/14/2019 7/9/2018 5/31/2019 12/31/2018 9/28/2018 12/31/2019
25     1/2/2018       23     2/15/2018       71     5/22/2017       29     1/1/2018       51     6/15/2014       36     10/17/2014       18     10/15/2014	7/9/2018 5/31/2019 12/31/2018 9/28/2018 12/31/2019
23     2/15/2018       71     5/22/2017       29     1/1/2018       51     6/15/2014       36     10/17/2014       18     10/15/2014	<ul> <li>5/31/2019</li> <li>12/31/2018</li> <li>9/28/2018</li> <li>12/31/2019</li> </ul>
71         5/22/2017           29         1/1/2018           51         6/15/2014           36         10/17/2014           18         10/15/2014	<ul> <li>12/31/2018</li> <li>9/28/2018</li> <li>12/31/2019</li> </ul>
29     1/1/2018       51     6/15/2014       36     10/17/2014       18     10/15/2014	9/28/2018 12/31/2019
51         6/15/2014           36         10/17/2014           18         10/15/2014	12/31/2019
36         10/17/2014           18         10/15/2014	
18 10/15/2014	4 11/1/2018
	4 10/15/2018
12/10/2014	4 12/10/2018
76 1/1/2018	12/31/2018
00 1/1/2018	12/31/2019
13 5/1/2017	2/28/2019
'0 6/15/2017	' 6/1/2019
38 10/23/2017	7 12/31/2018
87 6/14/2018	1/31/2019
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00 10/1/2016	9/30/2018
)2 2/5/2018	9/1/2018
96 11/1/2017	3/31/2019
00 4/5/2017	8/31/2018
3/1/2016	12/31/2018
69 6/30/2018	12/15/2018
9/25/2017	3/31/2019
.7 3/16/2018	3 7/1/2018
83 3/1/2018	10/12/2018
90 8/22/2016	8/30/2019
5 7/1/2017	12/31/2018
1/1/2018	12/31/2018
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1	12/10/2018
16 2/1/2018	5 1/15/2019
l6 2/1/2018 4/25/2016	10/04/00/0
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## R00407

# Energy Trust of Oregon Contract Status Summary Report

# For contracts with costs through: 8/1/2018

Consortium for Energy Efficiency	Membership Dues - 2018		23,074	23,074	0	1/1/2018	12/31/2018
Michaels Energy, Inc.	Large NB Impact Evaluation	La Crosse	18,000	0	18,000	8/1/2018	3/31/2020
Earth Advantage, Inc.	Sponsorship	Portland	17,750	10,250	7,500	3/1/2017	2/28/2019
Research Into Action, Inc.	Research -MF Energy Savings	Portland	15,360	15,360	0	1/5/2018	6/30/2018
AIQUEOUS LLC	Water Market Study	Austin	15,000	7,500	7,500	6/18/2018	9/30/2018
KEMA Incorporated	New Bldg Evaluation	Oakland	13,000	1,847	11,153	10/1/2017	3/31/2019
American Council for and Energy Efficient Economy	ACEEE Sponsorship - 2018		12,500	12,500	0	1/1/2018	12/31/2018
Cascade Energy, Inc.	PE Custom Track SEM Curriculm	Walla Walla	10,000	0	10,000	7/23/2018	10/31/2018
Consortium for Energy Efficiency	IEM DSM Sponsorship		10,000	10,000	0	3/13/2018	12/31/2018
Research Into Action, Inc.	Review Mesure Dev. Process	Portland	10,000	3,095	6,906	6/12/2018	11/30/2018
Alliance For Sustainable Energy, LLC	Technical Services Agreement	Lakewood	9,609	9,609	0	3/19/2018	11/30/2018
LightTracker, Inc.	Lighting Market Analysis	Boulder	9,000	9,000	0	4/1/2018	12/31/2018
City of Portland Bureau of Planning & Sustainability	Sponsorship - 2018	Portland	8,000	8,000	0	1/1/2018	12/31/2018
Earth Advantage, Inc.	2018 - Sponsorship	Portland	7,750	5,000	2,750	6/1/2018	12/31/2018
Resource Innovation Institute	2018 Event Sponsorship	Portland	7,500	7,500	0	2/7/2018	12/31/2018
Northwest Energy Efficiency Council	BOC 2018 Sponsorship	Seattle	7,300	7,300	0	1/1/2018	12/31/2018
The Cadmus Group Inc.	NB Evaluation Plan	Watertown	6,500	0	6,500	10/1/2017	3/31/2019
Shades of Green	Shades of Green Sponsorship	Portland	5,000	5,000	0	11/6/2017	10/30/2018
Social Enterprises Inc.	GoGreen Sponsorhip - 2018	Portland	5,000	5,000	0	6/12/2018	10/31/2018
Travel Portland	My People's Market Sponsorship	Portland	5,000	5,000	0	5/31/2018	12/31/2018
The Cadmus Group Inc.	Impact Evaluation NB projects	Watertown	4,000	1,656	2,344	6/18/2018	11/30/2018
	Energy E	Efficiency Total:	100,292,139	58,641,505	41,650,634		
Joint Programs							
E Source Companies LLC	Membership Agreement	Boulder	75,607	75,607	0	1/1/2018	12/31/2018
Structured Communications Systems, Inc.	ShoreTel Phone System Install		70,345	65,287	5,059	1/1/2017	12/31/2018
Infogroup Inc	Data License & Service Agmt	Papillion	26,114	13,057	13,057	2/12/2018	2/12/2020
Research Into Action, Inc.	Trade Ally Survey	Portland	20,000	14,756	5,244	4/24/2018	11/30/2018
Navigant Consulting Inc	Resource Assessment Updates	Boulder	10,600	9,825	775	8/26/2016	8/26/2018
	Joint F	Programs Total:	202,666	178,532	24,135		
Renewable Energy							
Sunway 3, LLC	Prologis PV installation		3,405,000	3,261,044	143,956	9/30/2008	9/30/2028
Clean Water Services	Project Funding Agreement		3,000,000	2,013,106	986,894	11/25/2014	11/25/2039
Oregon Institute of Technology	Geothermal Resource Funding	Klamath Falls	1,550,000	1,550,000	0	9/11/2012	9/11/2032
Farm Power Misty Meadows LLC	Misty Meadows Biogas Facility	Mount Vernon	1,000,000	1,000,000	0	10/25/2012	10/25/2027

# Energy Trust of Oregon Contract Status Summary Report

# For contracts with costs through: 8/1/2018

Three Sisters Irrigation District	TSID Hydro	Sisters	1,000,000	1,000,000	0	4/25/2012	9/30/2032
Farmers Irrigation District	FID - Plant 2 Hydro	Hood River	900,000	900,000	0	4/1/2014	4/1/2034
Klamath Falls Solar 2 LLC	PV Project Funding Agreement	San Mateo	850,000	382,500	467,500	7/11/2016	7/10/2041
Old Mill Solar, LLC	Project Funding Agmt Bly, OR	Lake Oswego	490,000	490,000	0	5/29/2015	5/28/2030
City of Medford	750kW Combined Heat & Power	Medford	450,000	450,000	0	10/20/2011	10/20/2031
City of Pendleton	Pendleton Microturbines	Pendleton	450,000	150,000	300,000	4/20/2012	4/20/2032
Deschutes Valley Water District	Opal Springs Hydro Project	Madras	450,000	0	450,000	1/1/2018	4/1/2040
RES - Ag FGO LLC	Biogas Manure Digester Project	Washington	441,660	441,660	0	10/27/2010	10/27/2025
RES - Ag FGO LLC	Biogas Manure Digester - FGO	Washington	441,660	438,660	3,000	10/27/2010	10/27/2025
Three Sisters Irrigation District	TSID Funding Agreement	Sisters	400,000	0	400,000	1/1/2018	12/31/2038
Farmers Conservation Alliance	Program Support	Hood River	367,000	143,396	223,604	1/1/2018	12/31/2019
SunE Solar XVI Lessor, LLC	BVT Sexton Mtn PV	Bethesda	355,412	355,412	0	5/15/2014	12/31/2034
Clty of Gresham	City of Gresham Cogen 2		350,000	334,523	15,477	4/9/2014	7/9/2034
Luxurious Plumbing and Heating, Inc.	Solar Verifier Services	West Linn	250,000	202,640	47,360	8/1/2016	9/15/2018
Clean Power Research, LLC	PowerClerk License	Napa	215,478	215,478	0	7/1/2017	6/30/2019
BSA Enterprises Inc	Solar Verifier Services	Sisters	200,000	116,599	83,401	8/1/2016	7/31/2018
Gary Higbee DBA WindStream Solar	Solar Verifier Services	Eugene	200,000	150,528	49,472	8/1/2016	9/15/2018
RHT Energy Inc.	Verifier Services Agmt - Solar	Medford	200,000	183,918	16,083	8/1/2016	7/31/2018
City of Astoria	Bear Creek Funding Agreement	Astoria	143,000	143,000	0	3/24/2014	3/24/2034
Solar Oregon	Outreach Agreement	Portland	135,300	125,400	9,900	1/1/2015	6/30/2018
Wallowa County	Project Funding Agreement	Enterprise	80,000	0	80,000	4/1/2018	3/31/2038
SPS of Oregon Inc	Project Funding Agreement	Wallowa	75,000	74,513	488	10/15/2015	10/31/2036
Kleinschmidt Associates	Evaluation Services	Pittsfield	47,400	47,609	(209)	1/1/2017	11/30/2018
TRC Engineers Inc.	2018 EPS New Const PDC - Solar	Irvine	41,500	23,808	17,692	1/1/2018	12/31/2018
Clean Energy States Alliance	2018 CESA Sponsorship		39,500	39,500	0	6/1/2018	6/30/2019
Clean Power Research, LLC	WattPlan Software	Napa	38,000	38,000	0	11/17/2017	6/30/2019
Craft3	NON-EEAST OBR Svc Agrmt	Portland	30,000	10,250	19,750	1/1/2018	12/31/2018
The Solar Foundation	Workforce Diversity Survey	Washington	27,500	0	27,500	7/17/2018	12/31/2018
ENERGYneering Solutions Inc	Biopower & Hydro Evaluations	Sisters	25,000	24,954	46	12/6/2016	11/30/2018
University of Oregon	UO SRML Contribution - 2018	Eugene	24,999	24,999	0	3/9/2018	3/8/2019
Wallowa Resources Community Solutions, Inc.	Renewables Field Outreach		24,999	11,261	13,738	2/1/2018	1/30/2020
Robert Migliori	42kW wind energy system	Newberg	24,125	24,125	0	4/11/2007	1/31/2024
Site Capture LLC	SiteCapture Subscription	Austin	24,000	10,500	13,500	2/1/2018	1/31/2019
Kennedy/Jenks Consultants	Third Party Technical Review	Portland	15,000	15,000	0	6/11/2018	8/15/2018
Warren Griffin	Griffin Wind Project	Salem	13,150	9,255	3,895	10/1/2005	10/1/2020

# Energy Trust of Oregon Contract Status Summary Report

For contracts with cost through: 8/1/2018	S					Pa	age 5 of 5
Rocky Mountain Institute	Membership Dues	Boulder	8,000	0	8,000	8/15/2018	12/31/2018
OSEIA-Oregon Solar Energy Industries Assoc	OSEIA 2018 Conf. Sponsorship		7,500	7,500	0	9/1/2017	12/31/2018
Bonneville Environmental Foundation	REC/WRC Purchase 2016	Portland	7,290	4,860	2,430	1/1/2016	12/31/2018
Seattle University	2018 Mid-Career Inst. Environm	Seattle	5,000	0	5,000	6/22/2018	12/31/2018
	Renewab	le Energy Total:	17,802,473	14,413,995	3,388,478		
		Grand Total:	137,268,159	81,944,351	55,323,808		

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# **Notes on August 2018 Financial Statements**

September 19, 2018

## <u>Revenue</u>

Overall revenues remain within 4% of budgeted amounts.

	YTD Actual	YTD Budget	<u>YTD Var</u>	YTD %	PY
PGE Efficiency	64,640,826	62,259,946	2,380,880	4%	63,004,046
PGE Renewables	5,759,998	5,646,665	113,333	2%	5,860,747
PAC Efficiency	37,411,058	36,698,852	712,206	2%	39,378,177
PAC Renewables	4,292,696	4,317,798	(25,102)	-1%	4,388,388
NWN	16,525,322	16,250,409	274,913	2%	19,757,008
CNG	1,751,548	1,376,672	374,876	27%	1,987,979
Avista	867,653	771,247	96,406	13%	614,418
Grant Revenue	53,194		53,194	0%	
Investment Income	594,040	150,000	444,040	296%	251,905
Total	131,896,334	127,471,589	4,424,747	3%	135,242,669

## **Reserves**

As we said last month, our current look at year-end shows that reserves will be significantly reduced by 12/31/18. We will have a better picture when we do our final forecast in October. We believe Cascade Natural Gas will require a temporary draw from the contingency reserve. We will discuss NWN Industrial DSM next week and hope to receive an additional payment to compensate for that shortfall. Avista has already agreed to additional funding to correct for the previously reported shortfall.

Reserves				
	12/31/18	8/31/18	12/31/18	8/31/17
	forecast	current	<u>beg of year</u>	<u>one year ago</u>
PGE	10,727,959	31,382,271	12,210,374	20,075,343
PacifiCorp	3,394,943	16,388,271	6,211,995	11,515,624
NW Natural	2,402,431	7,517,713	3,527,721	7,154,841
Cascade	(151,692)	1,062,325	262,065	664,981
Avista	1,657	18,329	75,716	103,895
NWN Industrial	(600,114)	1,361,601	2,647,086	2,963,233
NWN Washington	420,357	605,432	176,503	52,742
PGE Renewables	8,744,454	8,536,509	7,073,074	7,047,615
PAC Renewables	6,334,064	6,948,497	6,268,078	6,462,962
Program Reserves	31,274,059	73,820,927	38,452,612	56,041,236
Other Reserves	0	27,066	38,710	
Contingency Reserve	5,000,000	5,000,000	5,000,000	5,000,000
Board approved for program loans	1,800,000	1,800,000	800,000	
Contingency Available	3,645,148	3,435,349	4,641,309	4,523,715
Total	41,719,205	84,083,345	48,132,611	65,564,938

## **Expenses**

August spending was right on target with the budget. Incentives came in \$119,000 (2%) more than anticipated. Year-to-date incentives remain \$6.1 million below budget. Staff expenses are above budget for the month due to the number of workdays in the month and are below budget year to date due to vacancies that have occurred over the past eight months in various departments, including the budgeted position for a CFO we did not fill. Professional services are below budget due to certain projects not beginning as quickly as planned.



## Notes on August Financial Statements

	Total Incentives						
	2018 Actual	2018 Budget	2017 Actual				
Existing Buildings	8,821,113	10,294,732	10,997,238				
Multifamily Buildings	1,899,629	1,896,986	2,018,887				
New Buildings	4,761,052	6,207,894	4,625,873				
Production Efficiency	6,977,134	7,758,729	8,680,039				
Residential Program	12,966,593	15,323,415	16,118,341				
Washington Programs - All	518,277	525,682	652,903				
Solar	3,898,215	3,967,100	5,918,430				
Other Renewables	1,301,330	1,279,451	3,058,914				
Total Incentives	41,143,342	47,253,989	52,070,625				
Energy Efficiency Only	35,943,798	42,007,438	43,093,281				

# **Investment Status**

The graphs below show the type of investments we hold and the locations where our funds are held. We are investing in short term areas (mainly 13 week CDARs). We want to ensure cash is available to meet year end demands by late December/early January. As the 2019 budget is completed and our confidence grows, we will probably be able to invest for the slightly longer term.





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

	August 2018	July 2018	December 2017	August 2017	Change from one month ago	Change from Beg. of Year	Change from one year ago
Current Assets							
Cash & Cash Equivalents	36,614,329	38,503,624	52,223,904	41,171,730	(1,889,296)	(15,609,575)	(4,557,401)
Investments	54,391,604	53,799,989	22,721,392	33,211,209	591,615	31,670,212	21,180,395
Receivables	24,081	50,208	119,077	156,453	(26,128)	(94,997)	(132,372)
Prepaid Expenses	459,231	536,084	244,442	344,106	(76,853)	214,789	115,126
Advances to Vendors	773,190	1,546,356	2,489,421	711,143	(773,167)	(1,716,231)	62,047
Total Current Assets	92,262,434	94,436,263	77,798,237	75,594,640	(2,173,828)	14,464,198	16,667,794
Fixed Assets							
Computer Hardware and Software	3,934,165	3,934,165	3,733,082	3,733,082	-	201,083	201,083
Software Development in Progress	-	-	183,687		-	(183,687)	-
Leasehold Improvements	595,027	595,027	595,027	591,770	-	-	3,256
Office Equipment and Furniture	819,795	819,795	815,056	815,056	-	4,739	4,739
Total Fixed Assets	5,348,986	5,348,986	5,326,852	5,139,908	-	22,134	209,078
Less Depreciation	(4.750,980)	(4.727.988)	(4.442.925)	(4.168.989)	(22,992)	(308.054)	(581.991)
Net Fixed Assets	598,006	620,998	883,926	970,919	(22,992)	(285,920)	(372,913)
Other Assets							
Deposits	237,314	237,314	237,314	237,314	-	-	-
Deferred Compensation Asset	992,679	990,737	972,828	877,549	1,942	19,851	115,130
Note Receivable, net of allowance	430,669	430,669	263,669	263,669	-	167,000	167,000
Total Other Assets	1,660,663	1,658,721	1,473,812	1,378,533	1,942	186,851	282,130
Total Assets	94,521,103	96,715,981	80,155,975	77,944,093	(2,194,878)	14,365,129	16,577,011
Current Liabilities							
Accounts Payable and Accruals	7,507,296	10,159,974	29,180,745	9,656,480	(2,652,678)	(21,673,449)	(2,149,184)
Salaries, Taxes, & Benefits Payable	853,828	982,071	874,594	902,397	(128,244)	(20,766)	(48,569)
Total Current Liabilities	8,361,124	11,142,045	30,055,339	10,558,876	(2,780,922)	(21,694,215)	(2,197,753)
Long Term Liabilities							
Deferred Rent	1,087,084	1,074,991	990,344	936,864	12,093	96,740	150,220
Deferred Compensation Payable	986,298	990,737	976,378	881,099	(4,439)	9,920	105,199
Other Long-Term Liabilities	3,249	3,249	1,290	2,315	-	1,959	934
Total Long-Term Liabilities	2,076,630	2,068,977	1,968,012	1,820,278	7,653	108,619	256,352
Total Liabilities	10,437,754	13,211,023	32,023,351	12,379,154	(2,773,269)	(21,585,597)	(1,941,400)
Net Assets							
Unrestricted Net Assets	84,083,349	83,504,959	48,132,624	65,564,938	578,390	35,950,726	<u>18,</u> 518,411
Total Net Assets	84,083,349	83,504,959	48,132,624	65,564,938	578,390	35,950,726	18,518,411
Total Liabilities and Net Assets	94,521,103	96,715,981	80,155,975	77,944,093	(2,194,878)	14,365,129	16,577,011

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

	January	<b>February</b>	<u>March</u>	<u>April</u>	<u>May</u>	June	<u>July</u>	<u>August</u>	Year to Date
Operating Activities:									
Revenue less Expenses	\$ 11,111,618 \$	11,785,867 \$	5,880,943 \$	6,097,341 \$	\$ 1,847,257 \$	(3,889,820) \$	2,539,130 \$	578,392	\$ 35,950,727
<i>Non-cash items:</i> Depreciation Change in Reserve on Long Term Note Loss on disposal of assets	60,349	60,436	37,154	35,624	33,910	31,464	26,631	22,992	308,560 - -
Receivables Interest Receivable Advances to Vendors Prepaid expenses and other costs Accounts payable Payroll and related accruals Deferred rent and other	25,330 11,816 1,053,629 (423,367) (18,224,160) 94,882 12,093	13,597 701 717,885 (160,906) (151,198) 102,231 12,092	(10,052) 586 (1,549,230) 52,859 (3,016,589) (227,298) 12,092	(101,297) (36,521) 755,704 53,228 1,026,311 (11,396) 12,093	89,402 59,170 755,705 (29,400) (486,892) 148,977 14,051	(6,066) (27,651) (1,563,795) 67,421 43,241 58,746 12,093	(5,248) 55,102 773,167 (36,386) 1,788,509 (44,306) 12,092	34,210 (8,083) 773,166 74,911 (2,652,679) (132,682) 12,093	39,877 55,119 1,716,231 (401,640) (21,673,457) (10,846) 98,699
Cash rec'd from / (used in) Operating Activities	(6,277,810)	12,380,706	1,180,465	7,831,087	2,432,180	(5,274,367)	5,108,691	(1,297,680)	16,083,272
Investing Activities: Investment Activity (1) (Acquisition)/Disposal of Capital Assets Cash roc'd from (usod in) Investing	3,011,583 (2,843)	(2,002,711) (8,444)	(8,416,303) (3,397)	(3,992,551)	5,387,728 (7,955)	(16,077,806)	(8,988,537)	(591,615)	(31,670,212) (22,639)
Activities	3,008,740	(2,011,155)	(8,419,700)	(3,992,551)	5,379,773	(16,077,806)	(8,988,537)	(591,615)	(31,692,851)
Cash at beginning of Period	52,223,904	48,954,835	59,324,388	52,085,153	55,923,690	63,735,643	42,383,470	38,503,624	52,223,904
Increase/(Decrease) in Cash Cash at end of period	(3,269,070)	10,369,552	(7,239,235)	3,838,536 55,923,690 \$	7,811,953	(21,352,173)	(3,879,846) 38,503,624 \$	(1,889,295)	(15,609,578)

(1) As investments mature, they are rolled into the Repo account.

Investments that are made during the month reduce available cash.

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

				Actua	I				Adjusted Budget				
	January	February	March	April	Мау	June	July	August	September	October	November	December	
Cash In:													
Public purpose and Incr funding	18,964,634	21,537,912	17,624,324	17,785,777	15,360,373	12,544,226	13,567,185	13,864,679	13,485,132	14,120,433	12,672,298	15,245,954	
Investment Income	48,230	35,414	48,768	21,666	136,385	71,477	171,619	115,601	(75,944)	(75,944)	(75,944)	(75,944)	
From Other Sources	31,744	20,495	383	(96,406)	95,652	0	(55)	41,257					
Total cash in	19,044,608	21,593,822	17,673,475	17,711,037	15,592,410	12,615,703	13,738,749	14,021,537	13,409,188	14,044,489	12,596,354	15,170,010	
Cash Out:	(25,325,256)	(9,221,560)	(16,496,406)	(9,879,952)	(13,168,186)	(17,890,069)	(8,630,058)	(15,319,218)	(17,556,541)	(16,744,900)	(18,220,784)	(26,386,118)	
Net cash flow for the month	(6,280,648)	12,372,261	1,177,069	7,831,085	2,424,224	(5,274,366)	5,108,691	(1,297,681)	(4,147,353)	(2,700,411)	(5,624,430)	(11,216,108)	
Cash Flow from/to Investments	3,011,583	(2,002,711)	(8,416,303)	(3,992,551)	5,387,728	(16,077,806)	(8,988,537)	(591,615)			2,500,000	21,325,000	
Beginning Balance: Cash & MM	52,223,904	48,954,835	59,324,381	52,085,150	55,923,690	63,735,643	42,383,469	38,503,623	36,614,329	32,466,973	29,766,562	26,642,131	
Ending cash & MM	48,954,835	59,324,381	52,085,153	55,923,690	63,735,643	42,383,470	38,503,624	36,614,329	32,466,973	29,766,562	26,642,131	36,751,023	
Future Commitments													
Renewable Incentives	8,300,000	8,500,000	6,400,000	4,900,000	5,200,000	7,000,000	7,200,000	7,600,000	7,800,000	8,200,000	8,600,000	8,600,000	
Efficiency Incentives	84,300,000	85,700,000	88,200,000	90,600,000	89,500,000	98,400,000	100,700,000	113,600,000	109,200,000	107,000,000	107,000,000	107,000,000	
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	
Tabl Queen have to	07.000.000	00.000.005	00.000.000	100 500 005	00 700 000	110,100,000	110,000,000	100 000 000	100.000.000	100.000.000	100,000,000	100.000.000	
I otal Commitments	97,600,000	99,200,000	99,600,000	100,500,000	99,700,000	110,400,000	112,900,000	126,200,000	122,000,000	120,200,000	120,600,000	120,600,000	

 Dedicated funds adjustment:
 reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements

 Committed funds adjustment:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Cash reserve:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Excrow:
 dedicated funds set aide in separate bank accounts

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

	2019 Final R2 Projection													
	January	February	March	April	Мау	June	August	September	September	October	November	December		
Cash In:														
Public purpose and Incr funding	15,970,862	20,394,304	20,722,660	17,098,459	14,743,958	13,596,738	14,573,633	13,617,897	14,099,097	15,412,038	13,580,079	16,540,633		
Investment Income	25,000	15,000	15,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000		
From Other Sources														
Total cash in	15,995,862	20,409,304	20,737,660	17,113,459	14,763,958	13,616,738	14,593,633	13,637,897	14,119,097	15,432,038	13,600,079	16,560,633		
Cash Out:	(33,138,677)	(11,040,289)	(12,017,485)	(12,649,468)	(12,460,968)	(13,228,580)	(14,957,185)	(12,174,555)	(13,517,924)	(16,641,042)	(17,904,238)	(21,900,335)		
Net cash flow for the month	(17,142,814)	9,369,016	8,720,175	4,463,992	2,302,990	388,158	(363,552)	1,463,343	601,173	(1,209,003)	(4,304,159)	(5,339,702)		
Cash Flow from/to Investments	-					-	-	-	-	-	-	-		
Beginning Balance: Cash & MM	36,751,023	19,608,209	28,977,224	37,697,399	42,161,391	44,464,381	44,852,539	44,488,987	45,952,330	46,553,503	45,344,500	41,040,340		
Ending cash & MM	19.608.209	28.977.224	37.697.399	42.161.391	44.464.381	44.852.539	44.488.987	45.952.330	46.553.503	45.344.500	41.040.340	35,700,638		

Renewable Incentives	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000	8,600,000
Efficiency Incentives	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000	107,000,000
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	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000	120,600,000

 Dedicated funds adjustment:
 reduction in available cash for commitments to Renewable program projects with board approval, or when board approval not required, with signed agreements

 Committed funds adjustment:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Cash reserve:
 reduction in available cash for commitments to Efficiency program projects with signed agreements

 Excrow:
 dedicated funds set aide in separate bank accounts

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

		Augus	st		YTD					
	Actual	Budget	Budget Variance	Variance %	Actual	Budget	Budget Variance	Variance %		
REVENUES										
Public Purpose Funds-PGE	3,046,423	2,918,712	127,711	4%	25,723,897	25,664,337	59,560	0%		
Public Purpose Funds-PacifiCorp	2,258,221	2,406,948	(148,727)	-6%	19,257,860	19,394,895	(137,035)	-1%		
Public Purpose Funds-NW Natural	629,099	594,519	34,579	6%	14,919,200	14,606,310	312,890	2%		
Public Purpose Funds-Cascade	69,890	46,155	23,735	51%	1,751,548	1,376,672	374,876	27%		
Public Purpose Funds-Avista	96,406	96,406	0	0%	867,653	771,247	96,406	13%		
Total Public Purpose Funds	6,100,038	6,062,740	37,298	1%	62,520,158	61,813,461	706,697	1%		
Incremental Funds - PGE	5,195,629	5,135,268	60,362	1%	44,676,927	42,242,274	2,434,653	6%		
Incremental Funds - PacifiCorp	2,569,003	2,648,175	(79,172)	-3%	22,445,894	21,621,755	824,139	4%		
NW Natural - Industrial DSM				-				-		
NW Natural - Washington			-	-	1,606,122	1,644,099	(37,977)	-		
Grant Revenue	7,046		7,046	-	53,194		53,194	-		
Revenue from Investments	123,684	20,000	103,684	518%	594,040	150,000	444,040	296%		
TOTAL REVENUE	13,995,401	13,866,183	129,218	1%	131,896,334	127,471,589	4,424,745	3%		
EXPENSES										
Program Subcontracts	5,085,397	4,962,356	(123,041)	-2%	38,590,843	38,406,004	(184,840)	0%		
Incentives	6,191,445	6,072,462	(118,983)	-2%	41,143,342	47,253,989	6,110,647	13%		
Salaries and Related Expenses	1,433,721	1,277,379	(156,342)	-12%	9,963,331	10,078,014	114,683	1%		
Professional Services	492,238	892,122	399,884	45%	4,439,460	7,360,336	2,920,877	40%		
Supplies	1,993	3,958	1,965	50%	25,325	31,667	6,342	20%		
Telephone	3,789	4,300	511	12%	30,695	34,400	3,705	11%		
Postage and Shipping Expenses	677	2,042	1,365	67%	5,616	16,333	10,718	66%		
Occupancy Expenses	73,681	78,703	5,022	6%	616,978	629,622	12,644	2%		
Noncapitalized Equip. & Depr.	46,422	82,916	36,494	44%	566,066	714,800	148,734	21%		
Call Center	15,260	15,000	(260)	-2%	116,678	120,000	3,322	3%		
Printing and Publications	21	1,046	1,025	98%	11,675	10,867	(808)	-7%		
Travel	16,009	19,404	3,395	17%	127,844	155,233	27,389	18%		
Conference, Training & Mtng Exp	24,733	22,808	(1,925)	-8%	124,918	162,967	38,049	23%		
Interest Expense and Bank Fees			0		1,712	1,500	(212)	-14%		
Insurance	10,713	9,167	(1,546)	-17%	74,274	73,333	(941)	-1%		
Miscellaneous Expenses		250	250	100%	2,896	2,000	(896)	-45%		
Dues, Licenses and Fees	20,912	25,996	5,083	20%	103,956	160,311	56,355	35%		
TOTAL EXPENSES	13,417,010	13,469,908	52,898	0%	95,945,611	105,211,377	9,265,767	9%		
TOTAL REVENUE LESS EXPENSES	578,390	396,275	182,116	46%	35,950,723	22,260,213	13,690,511	62%		

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

	August					YTD					
	Actual	Actual Prior Year	Prior Year Variance	Variance %	Actual	Actual Prior Year	Prior Year Variance	Variance %			
REVENUES											
Public Purpose Funds-PGE	3,046,423	2,977,305	69,117	2%	25,723,897	26,180,233	(456,335)	-2%			
Public Purpose Funds-PacifiCorp	2,258,221	2,358,937	(100,716)	-4%	19,257,860	19,922,226	(664,366)	-3%			
Public Purpose Funds-NW Natural	629,099	608,669	20,430	3%	14,919,200	14,953,945	(34,745)	0%			
Public Purpose Funds-Cascade	69,890	66,650	3,240	5%	1,751,548	1,987,979	(236,431)	-12%			
Public Purpose Funds-Avista	96,406		96,406	#DIV/0!	867,653	614,418	253,235	41%			
Total Public Purpose Funds	6,100,038	6,011,561	88,477	1%	62,520,158	63,658,801	(1,138,643)	-2%			
Incremental Funds - PGE	5,195,629	5,189,035	6,594	0%	44,676,927	42,684,561	1,992,366	5%			
Incremental Funds - PacifiCorp	2,569,003	2,840,559	(271,556)	-10%	22,445,894	23,844,339	(1,398,445)	-6%			
NW Natural - Industrial DSM			0			3,720,596	(3,720,596)				
NW Natural - Washington			0		1,606,122	1,082,467	523,655	48%			
Grant Revenue	7,046		7,046	-	53,194		53,194	-			
Revenue from Investments	123,684	43,129	80,555	187%	594,040	251,905	342,134	136%			
TOTAL REVENUE	13,995,401	14,084,284	(88,883)	-1%	131,896,334	135,242,669	(3,346,334)	-2%			
EXPENSES											
Program Subcontracts	5,085,397	4,799,373	(286,024)	-6%	38,590,843	36,901,314	(1,689,529)	-5%			
Incentives	6,191,445	7,972,789	1,781,344	22%	41,143,342	52,070,625	10,927,283	21%			
Salaries and Related Expenses	1,433,721	1,126,639	(307,081)	-27%	9,963,331	8,901,460	(1,061,871)	-12%			
Professional Services	492,238	589,782	97,545	17%	4,439,460	3,588,482	(850,977)	-24%			
Supplies	1,993	5,508	3,515	64%	25,325	24,418	(907)	-4%			
Telephone	3,789	3,722	(67)	-2%	30,695	36,545	5,849	16%			
Postage and Shipping Expenses	677	666	(10)	-2%	5,616	7,245	1,630	22%			
Occupancy Expenses	73,681	80,736	7,055	9%	616,978	616,898	(80)	0%			
Noncapitalized Equip. & Depr.	46,422	93,173	46,752	50%	566,066	787,454	221,387	28%			
Call Center	15,260	15,594	334	2%	116,678	95,273	(21,405)	-22%			
Printing and Publications	21	209	188	90%	11,675	3,556	(8,118)	-228%			
Travel	16,009	15,005	(1,004)	-7%	127,844	131,765	3,922	3%			
Conference, Training & Mtng Exp	24,733	12,571	(12,162)	-97%	124,918	132,420	7,503	6%			
Interest Expense and Bank Fees			-		1,712	1,678	(34)	-2%			
Insurance	10,713	8,803	(1,910)	-22%	74,274	70,262	(4,012)	-6%			
Miscellaneous Expenses		4,887	4,887.25		2,896	34,986	32,090	92%			
Dues, Licenses and Fees	20,912	25,770	4,857	19%	103,956	147,269	43,314	29%			
TOTAL EXPENSES	13,417,010	14,755,228	1,338,218	9%	95,945,611	103,551,652	7,606,041	7%			
TOTAL REVENUE LESS EXPENSES	578,390	(670,944)	1,249,335	186%	35,950,723	31,691,017	4,259,706	13%			

#### Energy Trust of Oregon Statement of Functional Expenses For the 8 Months Ending August 31, 2018 (Unaudited)

	Energy Efficiency	Renewable Energy	Solar LMI	Total Program Expenses	Management & General	Communications & Customer Service	Total Admin Expenses	Community Solar Expenses	Total	Budget	Variance	% Var
Program Expenses												
Incentives	35,943,798	5,199,545		41,143,342					41,143,342	47,253,989	6,110,647	13%
Program Management & Delivery	38,292,948	297,895		38,590,843					38,590,843	38,406,004	(184,839)	0%
Payroll and Related Expenses	2,784,280	879,058	35,756	3,699,094	1,710,605	1,358,213	3,068,818	11,644	6,779,556	6,834,189	54,633	1%
Outsourced Services	2,364,122	467,725	11,400	2,843,248	308,937	863,590	1,172,527		4,015,775	6,721,114	2,705,339	40%
Planning and Evaluation	1,824,160	96,389		1,920,549	7,229	120,486	127,715		2,048,264	2,132,399	84,135	4%
Customer Service Management	169,159	87,416		256,574					256,574	274,297	17,723	6%
Trade Allies Network	228,646	26,629		255,275					255,275	258,847	3,572	1%
Total Program Expenses	81,607,113	7,054,657	47,156	88,708,925	2,026,771	2,342,289	4,369,060	11,644	93,089,630	101,880,838	8,791,208	9%
Program Support Costs												
Supplies	6,527	2,246	14	8,788	6,352	3,150	9,502		18,290	22,926	4,636	20%
Postage and Shipping Expenses	1,340	471	3	1,814	1,079	673	1,752		3,566	12,939	9,373	72%
Telephone	1,528	537	4	2,068	859	759	1,618		3,687	5,818	2,131	37%
Printing and Publications	1,150	180	1	1,331	9,258	258	9,516		10,847	8,938	(1,909)	-21%
Occupancy Expenses	174,209	61,228	406	235,843	97,965	86,582	184,548		420,391	436,879	16,488	4%
Insurance	20,972	7,371	49	28,392	11,793	10,423	22,216		50,608	50,884	276	1%
Equipment	1,606	140,769	4	142,379	903	798	1,701		144,080	109,903	(34,177)	-31%
Travel	31,280	9,177	1,203	41,659	26,865	28,450	55,314		96,974	125,766	28,792	23%
Meetings, Trainings & Conferences	27,325	12,404	0	39,729	33,157	6,349	39,505		79,235	104,100	24,865	24%
Interest Expense and Bank Fees					1,712		1,712		1,712	1,500	(212)	-14%
Depreciation & Amortization	23,481	8,253	55	31,788	13,204	11,670	24,874		56,662	111,290	54,628	49%
Dues, Licenses and Fees	44,599	6,658		51,257	11,023	14,751	25,774		77,031	107,302	30,271	28%
Miscellaneous Expenses	1,901	138	1	2,040	220	195	415		2,455	1,388	(1,067)	-77%
IT Services	1,187,902	170,796	1,090	1,359,788	291,273	239,381	530,654		1,890,442	2,230,904	340,462	15%
Total Program Support Costs	1,523,820	420,227	2,829	1,946,876	505,664	403,439	909,103		2,855,979	3,330,538	474,559	14%
TOTAL EXPENSES	83,130,934	7,474,884	49,985	90,655,801	2,532,435	2,745,728	5,278,163	11,644	95,945,611	105,211,377	9,265,767	9%

OPUC Measure vs. 8%	5.5%
Program Support Costs	1,946,876
Total Admin Exp and Community Solar	5,289,807
Total Support and Administrative	7,236,683
	divided by
Total Utility Revenue (without Int Income)	131,249,101
OPUC %	5.5%

#### ENERGY TRUST OF OREGON Summary of All Units For the 8 Months Ending August 31, 2018

					NERGY EFFICIENCY					
	PGE	PacifiCorp	Total	NWN Industrial	NW Natural	Cascade	Avista	Oregon Total	NWN WA	ETO Total
REVENUES										
Public Purpose Funding	19,963,899	14,965,164	34,929,063		14,919,200	1,751,548	867,653	52,467,464		52,467,464
Incremental Funding	44,676,927	22,445,894	67,122,820					67,122,820	1,606,122	68,728,942
Grant Revenue										
Contributions										
Revenue from Investments										
TOTAL PROGRAM REVENUE	64,640,826	37,411,058	102,051,883	-	14,919,200	1,751,548	867,653	119,590,284	1,606,122	121,196,406
EXPENSES										
Program Management (Note 3)	2,371,924	1,425,913	3,797,836	109,476	657,905	55,559	54,793	4,675,569	108,049	4,783,618
Program Delivery	17,963,725	11,154,185	29,117,912	428,527	3,850,664	350,408	317,946	34,065,457	265,094	34,330,551
Incentives	18,650,727	10,713,143	29,363,870	604,571	4,651,818	408,321	396,943	35,425,521	518,277	35,943,798
Program Eval & Planning Svcs.	1,566,867	904,974	2,471,843	34,584	330,684	29,096	29,385	2,895,590	106,028	3,001,618
Program Marketing/Outreach	1,292,680	836,006	2,128,687	11,891	471,315	28,264	44,096	2,684,254	53,431	2,737,685
Program Legal Services	-	-	-	-	-	-	-	-	-	-
Program Quality Assurance	12,531.00	9,766.00	22,297.00	-	8,340.00	532.00	651.00	31,820.00	360.00	32,180.00
Outsourced Services	187,845	124,030	311,875	6,182	49,597	3,823	4,249	375,726	3,975	379,701
Trade Allies & Cust. Svc. Mgmt.	168,293	120,978	289,271	975	93,858	6,127	7,572	397,805	0	397,805
IT Services	594,008	350,527	944,538	13,031	176,457	13,641	15,234	1,162,901	25,001	1,187,902
Other Program Expenses - all	157,473	95,940	253,412	5,385	37,900	3,194	3,332	303,222	32,854	336,076
TOTAL PROGRAM EXPENSES	42,966,073	25,735,462	68,701,541	1,214,622	10,328,538	898,965	874,201	82,017,865	1,113,069	83,130,934
ADMINISTRATIVE COSTS										
Management & General (Notes 1 & 2)	1 200 950	719 274	1 920 224	34 001	288 196	25 105	24 393	2 291 919	30 768	2 322 687
Communications & Customer Svc (Notes 1 & 2)	1 302 098	779 852	2 081 952	36 865	312 469	27 220	26 447	2 484 954	33 359	2 518 313
Total Administrative Costs	2,503,048	1,499,126	4.002.176	70,866	600,665	52,325	50,840	4,776,873	64,127	4.841.000
		.,	.,,		,	02,020	00,010	.,	• .,	.,,
TOTAL PROG & ADMIN EXPENSES	45,469,121	27,234,588	72,703,717	1,285,488	10,929,203	951,290	925,041	86,794,738	1,177,196	87,971,934
TOTAL REVENUE LESS EXPENSES	19,171,705	10,176,470	29,348,166	(1,285,488)	3,989,997	800,258	(57,388)	32,795,546	428,926	33,224,472
NET ASSETS - RESERVES										
Cumulative Carryover at 12/31/17	12,210,566	6,211,801	18,422,366	2,647,089	3,527,716	262,067	75,717	24,934,948	176,506	25,111,445
Net Assets Reattributed from prior year			~~ ~ ~ ~ ~ ~ ~	(1 000 100)			(== 0.00)			
Change in net assets this year	19,171,705	10,176,470	29,348,166	(1,285,488)	3,989,997	800,258	(57,388)	32,795,546	428,926	33,224,472
Ending Net Assets - Reserves	31,382,271	16,388,271	47,770,532	1,361,601	7,517,713	1,062,325	18,329	57,730,494	605,432	58,335,917
Ending Reserve by Category										
Program Reserves (Efficiency and Renewables)	31.382.271	16.388.271	47.770.532	1.361.601	7.517.713	1.062.325	18.329	57,730,494	605.432	58.335.917
Operational Contingency Pool		-,,	,,	.,,	,2 , 0	.,,	,	,,-,-,-,	,-2	,,
Emergency Contingency Pool										
TOTAL NÉT ASSETS CUMULATIVE	31,382,271	16,388,271	47,770,532	1,361,601	7,517,713	1,062,325	18,329	57,730,494	605,432	58,335,917

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

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

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

#### ENERGY TRUST OF OREGON Summary of All Units For the 7 Months Ending August 31, 2018

	REN	EWABLE ENI	ERGY				TOTAL			
	PGE	PacifiCorp	Total	Solar LMI	Community Solar	Other	All Programs	Approved budget	Change	% Change
REVENUES										
Public Purpose Funding	5 759 998	4 292 696	10 052 694				62 520 158	61 813 461	706 697	1%
Incremental Funding	0,100,000	4,202,000	10,002,004				68 728 942	65 508 128	3 220 814	5%
Grant Revenue				53 194			53 194	00,000,120	53 194	070
Contributions				00,101			00,101		-	
Revenue from Investments						594.040	594.040	150.000	444.040	296%
TOTAL PROGRAM REVENUE	5,759,998	4,292,696	10,052,694	53,194	-	594,040	131,896,334	127,471,589	4,424,745	3%
EXPENSES										
Program Management (Note 3)	480,146	405.522	885.669	35.755	11.644	-	5.716.686	6.040.892	324,206	5%
Program Delivery	183,474	107,755	291,228	-	-	-	34,621,779	34,009,957	(611,822)	-2%
Incentives	2,776,448	2,423,098	5,199,545	-	-	-	41,143,343	47,253,989	6,110,646	13%
Program Eval & Planning Svcs.	52,363	44,026	96,389	-	-	-	3,098,007	4,221,485	1,123,478	27%
Program Marketing/Outreach	78,075	63,958	142,033	-	-	-	2,879,718	3,315,117	435,399	13%
Program Legal Services	-	-	-	-	-	-	0	4,000	4,000	100%
Program Quality Assurance	-	-	-	-	-	-	32,180	56,666	56,666	100%
Outsourced Services	200,102	125,590	325,692	11,400	-	-	716,793	1,506,130	789,337	52%
Trade Allies & Cust. Svc. Mgmt.	62,276	51,768	114,045	-	-	-	511,850	526,477	14,627	3%
IT Services	92,495	78,302	170,796	1,090	-	-	1,359,788	1,604,682	244,894	15%
Other Program Expenses - all	135,432	114,055	249,487	1,739	-	-	587,302	666,884	79,582	12%
TOTAL PROGRAM EXPENSES	4,060,811	3,414,074	7,474,884	49,985	11,644	-	90,667,447	99,206,279	8,538,832	9%
ADMINISTRATIVE COSTS										
Management & General (Notes 1 & 2)	112,987	94,993	207.980	1.768	-	-	2,532,435	3,222,662	690.226	21%
Communications & Customer Svc (Notes 1 & 2)	122,764	103.211	225,974	1.441	-	-	2,745,728	2,782,433	36,705	1%
Total Administrative Costs	235,751	198,204	433,954	3,209	-	-	5,278,163	6,005,095	726,932	12%
TOTAL PROG & ADMIN EXPENSES	4,296,562	3,612,278	7,908,838	53,194	11,644	-	95,945,611	105,211,377	9,265,767	9%
TOTAL REVENUE LESS EXPENSES	1,463,436	680,418	2,143,856	-	(11,644)	594,040	35,950,726	22,260,211	13,690,514	62%
NET ASSETS - RESERVES										
Cumulative Carryover at 12/31/17	7,073,073	6,268,079	13,341,154	-	38,710	9,641,309	48,132,624	43,871,177	4,261,447	10%
Change in net essets this year	1 462 426	690 419	2 142 956		(11 644)	504 040	25 050 726	22 260 211	12 600 515	620/
Ending Net Assets - Reserves	8,536,509	6,948,497	15,485,010	-	27,066	10,235,349	84,083,349	66,131,388	17,951,961	27%
Ending Basanya by Catagony										
Enumy Reserves (Efficiency and Renewables)	8 536 500	6 048 407	15 485 010		27 066		73 847 002			
	0,000,009	0,940,497	10,400,010	-	27,000	E 22E 240	13,041,993			
Emergency Contingency Pool						5,235,349	5,235,349			
	8 536 500	6 948 497	15 485 010		27 066	10 235 3/9	84 083 349	66 131 399	17 951 961	27%
	0,000,000	3,340,437		-	21,000	.0,200,040	0-,000,040	00,101,000	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	£1 /0

#### Energy Trust of Oregon Program Expense by Service Territory For the 8 Months Ending August 31, 2018 (Unaudited)

	PGE	Pacific Power	Subtotal Elec.	NWN Industrial	NW Natural Gas	Cascade	Avista	Subtotal Gas	Oregon Total	NWN WA	Solar LMI Co	ommunity Solar	ETO Total	YTD Budget	Variance	% Var
Energy Efficiency																
Commercial																
Existing Buildings	\$12,133,099	\$7,342,622	\$19,475,721	\$586,401	\$1,714,018	\$213,883	\$237,791	\$2,752,094	\$22,227,815	\$441,249			\$22,669,064	\$25,117,374	\$2,448,310	10%
Multifamily Buildings	4,069,100	1,186,038	5,255,139	2,679	449,715	15,380	69,280	537,054	5,792,193				5,792,193	6,005,548	213,355	4%
New Buildings	6,984,064	2,663,950	9,648,015	14,360	1,025,764	134,606	61,911	1,236,640	10,884,655				10,884,655	12,346,247	1,461,592	12%
NEEA	1,086,060	819,310	1,905,370		99,193	10,656		109,849	2,015,219				2,015,219	1,668,494	(346,725)	-21%
Total Commercial	24,272,324	12,011,921	36,284,245	603,441	3,288,690	374,524	368,982	4,635,637	40,919,882	441,249			41,361,131	45,137,663	3,776,532	8%
Industrial																
Production Efficiency	9,457,779	6,113,877	15,571,656	682,045	388,656	88,891	35,132	1,194,724	16,766,380				16,766,380	18,584,160	1,817,780	10%
NEEA	34,929	26,352	61,281						61,281				61,281	326,491	265,210	81%
Total Industrial	9,492,708	6,140,229	15,632,937	682,045	388,656	88,891	35,132	1,194,724	16,827,661				16,827,661	18,910,651	2,082,990	11%
Residential																
Residential Combined	10,121,173	7,888,306	18,009,479		6,678,039	426,242	520,926	7,625,207	25,634,686	735,946			26,370,632	29,617,455	3,246,823	11%
NEEA	1,582,922	1,194,132	2,777,054		573,816	61,639		635,455	3,412,509				3,412,509	3,499,371	86,862	2%
Total Residential	11,704,095	9,082,438	20,786,533		7,251,855	487,881	520,926	8,260,662	29,047,195	735,946			29,783,141	33,116,826	3,333,685	10%
Energy Efficiency Program Costs	45,469,121	27,234,588	72,703,715	1,285,488	10,929,203	951,290	925,041	14,091,023	86,794,738	1,177,196			87,971,933	97,165,140	9,193,207	9%
Renewables																
Solar Electric (Photovoltaic)	3.137.884	2.608.354	5.746.238						5.746.238		53.194		5.799.432	5.840.789	41.357	1%
Other Renewable	1,158,676	1.003.924	2,162,600						2.162.600				2,162,600	2,205,448	42.848	2%
Renewables Program Costs	4,296,562	3,612,278	7,908,838						7,908,838		53,194	-	7,962,032	8,046,237	84,205	1%
Community Solar Development												11,644	11,644		(11,644)	
Cost Grand Total	49,765,683	30,846,866	80,612,553	1,285,488	10,929,203	951,290	925,041	14,091,023	94,703,576	1,177,196	53,194	11,644	95,945,611	105,211,377	9,265,767	9%
#### Energy Trust of Oregon Administrative Expenses For the 8 Months Ending August 31, 2018 (Unaudited)

	MANAGEMENT & GENERAL					COMMUNICATIONS & CUSTOMER SERVICE						
	QUARTERLY				YTD	YTD		QUARTERLY		YTD		
	ACTUAL	BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE	ACTUAL	BUDGET	REMAINING	ACTUAL	BUDGET	VARIANCE
EXPENSES												
Outsourced Services	\$54,307	\$251,079	\$196,772	\$296,402	\$789,628	\$493,226	\$211,103	\$341,500	\$130,397	\$863,590	\$910,667	\$47,076
Legal Services	294	6,250	5,956	12,536	16,667	4,131						
Salaries and Related Expenses	403,081	703,753	300,671	1,710,516	1,807,326	96,811	350,955	480,828	129,872	1,358,134	1,282,207	(75,927)
Supplies	166	725	559	2,878	1,933	(945)		250	250	80	667	587
Postage and Shipping Expenses	212	750	538	326	2,000	1,674				7		(7)
Printing and Publications	1,310	1,125	(185)	8,971	3,000	(5,971)				4	2,500	2,496
Travel	6,347	13,850	7,503	26,832	36,933	10,102	6,705	12,500	5,795	28,421	33,333	4,913
Conference, Training & Mtngs	7,477	13,250	5,773	33,141	35,333	2,193	1,417	5,500	4,084	6,335	14,667	8,332
Interest Expense and Bank Fees				1,712	1,500	(212)						
Dues, Licenses and Fees	1,660	9,022	7,362	11,023	32,940	21,917	825	4,500	3,675	14,751	12,000	(2,751)
Shared Allocation (Note 1)	33,975	54,461	20,486	129,598	144,145	14,546	27,458	44,759	17,301	114,539	118,465	3,926
IT Service Allocation (Note 2)	73,512	116,822	43,310	291,273	343,730	52,457	60,416	96,010	35,594	239,381	282,493	43,112
Planning & Eval	1,684	2,825	1,140	7,229	7,526	297	28,071	47,076	19,005	120,486	125,435	4,949
TOTAL EXPENSES	584,026	1,173,912	589,886	2,532,435	3,222,662	690,226	686,949	1,032,922	345,972	2,745,728	2,782,433	36,705

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

Administrative Expenses 2nd Month of Quarter









## PINK PAPER

For contracts with costs through: 9/1/2018

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CONTRACTOR	Description	City	EST COST	Actual TTD	Remaining	Start	End		
Administration									
	Admin	istration Total:	13,313,143	5,417,620	7,895,522				
Communications									
	Commur	ications Total:	5,695,572	3,618,543	2,077,028				
Energy Efficiency									
Northwest Energy Efficiency	Regional EE Initiative Agmt	Portland	36,142,871	24,742,574	11,400,297	1/1/2015	7/1/2020		
ICF Resources, LLC	2018 BE PMC	Fairfax	15,616,683	9,740,655	5,876,028	1/1/2018	12/31/2018		
CLEAResult Consulting Inc	2018 Residential PMC	Austin	8,483,204	5,242,762	3,240,442	1/1/2018	12/31/2018		
CLEAResult Consulting Inc	2018 NBE PMC	Austin	6,206,575	4,249,815	1,956,760	1/1/2018	12/31/2018		
Northwest Energy Efficiency Alliance	Regional Gas EE Initiative	Portland	5,864,530	2,810,053	3,054,477	1/1/2015	7/1/2020		
Lockheed Martin Corporation	2018 MF PMC	Grand Prairie	4,655,000	2,847,640	1,807,360	1/1/2018	12/31/2018		
Energy 350 Inc	PDC - PE 2018	Portland	3,373,954	1,980,548	1,393,406	1/1/2018	12/31/2018		
Intel Corporation	EE Project Incentive Agmt	Hillsboro	2,400,000	0	2,400,000	11/13/2015	12/31/2019		
TRC Engineers Inc.	2018 EPS New Const PDC	Irvine	1,946,406	1,204,358	742,048	1/1/2018	12/31/2018		
Evergreen Consulting Group, LLC	PE Lighting PDC 2018	Tigard	1,875,000	1,240,500	634,500	1/1/2018	12/31/2018		
RHT Energy Inc.	PDC - PE 2018	Medford	1,836,230	1,050,758	785,472	1/1/2018	12/31/2018		
Northwest Power & Conservation Council	RTF Funding Agreement		1,825,000	1,349,096	475,904	2/25/2015	12/31/2019		
Cascade Energy, Inc.	PE Lighting PDC 2018	Walla Walla	1,823,250	1,197,464	625,786	1/1/2018	12/31/2018		
CLEAResult Consulting Inc	2018 Retail PDC	Austin	1,645,112	1,030,650	614,462	1/1/2018	12/31/2018		
SBW Consulting, Inc.	PE Program Impact Evaluation	Bellevue	573,000	561,140	11,860	5/1/2016	8/31/2018		
Craft3	Loan Agreement	Portland	500,000	167,000	333,000	1/1/2018	12/31/2019		
Pivotal Energy Solutions LLC	License Agreement	Gilbert	490,500	249,237	241,263	3/1/2014	12/31/2019		
EnergySavvy Inc.	Optix Engage Online Audit Tool	Seattle	467,000	253,125	213,875	6/1/2016	5/31/2020		
Michaels Energy, Inc.	NBE '15 & '16 Impact Eval	La Crosse	425,000	207,356	217,644	3/5/2018	3/1/2019		
KEMA Incorporated	EB & SEM 2017 Evaluation	Oakland	350,000	163,098	186,902	4/10/2018	5/30/2019		
Balanced Energy Solutions LLC	New Homes QA Inspections	Portland	321,700	158,962	162,738	4/27/2015	12/31/2018		
Cascade Energy, Inc.	PDC Transition Agreement	Walla Walla	311,107	0	311,107	9/1/2018	12/31/2018		
Craft3	Loan Agreement	Portland	300,000	300,000	0	6/1/2014	6/20/2025		
ICF Resources, LLC	2018 BE PMC - WA	Fairfax	258,286	159,290	98,996	1/1/2018	12/31/2018		
CLEAResult Consulting Inc	2018 Residential PMC - WA	Austin	238,129	134,985	103,144	1/1/2018	12/31/2018		
CLEAResult Consulting Inc	2018 Residential PMC - CustSvc	Austin	174,000	116,678	57,322	1/1/2018	12/31/2018		
ICF Resources, LLC	2018 BE PMC - DSM	Fairfax	161,119	83,511	77,608	1/1/2018	12/31/2018		
Evergreen Economics	2018 EB Process Evaluation	Portland	150,000	14,298	135,703	5/14/2018	3/31/2019		
Open Energy Efficiency, Inc.	Automated Meter Data Analysis	Mill Valley	150,000	77,760	72,240	1/1/2018	12/31/2018		

12/31/2018

10/15/2018

6/14/2019

7/9/2018

5/31/2019

12/31/2018

9/28/2018

12/31/2019

11/1/2018

10/15/2018

9/30/2020

12/10/2018

12/31/2018

12/31/2019

2/28/2019 6/1/2019

12/31/2018

1/31/2019

12/31/2018

9/1/2018

3/31/2019

8/31/2018

12/31/2018

12/15/2018

3/31/2019

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8/30/2019

12/31/2018 12/31/2018

12/31/2018

6/9/2020

8/15/2018

12/10/2018

1/15/2019

#### For contracts with costs Page 2 of 5 through: 9/1/2018 The Cadmus Group LLC 140,000 46,548 93,452 4/18/2018 Residential DHP Study Portland Michaels Energy, Inc. PE 16 &17 Impact Eval La Crosse 138,000 24,504 113,496 7/1/2018 98,993 4/2/2018 Research Into Action, Inc. PE Process Evaluation Portland 138,000 39,007 1/2/2018 SOW #20 NB RFP 28,625 Hitachi Consulting Corporation Dallas 127,500 98,875 Coordination Research Into Action, Inc. Fast Feedback 2018 Portland 115,500 76,402 39,098 2/15/2018 33,641 Alternative Energy Systems PE Review of Technical Carlsbad 100,000 66,359 5/22/2017 Consulting, Inc. Studies Research Into Action, Inc. NB Market Research 2018 Portland 90,000 85,537 4,463 1/1/2018 WegoWise Inc benchmarking license Boston 90,000 42,149 47,851 6/15/2014 1000 Broadway Building L.P. Pay-for-Performance Pilot Portland 88,125 80,959 7,166 10/17/2014 **CLEAResult Consulting Inc** Professional Services/Trans Austin 81,688 69,170 12,518 10/15/2014 10/1/2016 EES Consulting, Inc Professional Services Agmt Kirkland 80,430 32,580 47,850 Energy 350 Inc **Professional Services** Portland 64,062 63,993 70 12/10/2014 TRC Engineers Inc. 2018 EPS New Const PDC - Irvine 63,456 41,053 22,403 1/1/2018 WA Craft3 SWR Loan Origination/Loss Portland 55,000 0 55,000 1/1/2018 Fund Research Into Action, Inc. **Evaluation MHR Pilot** Portland 52,000 24,587 27,413 5/1/2017 Navigant Consulting Inc **Evaluation Cosultant-DSM** Boulder 50,500 40,731 9,770 6/15/2017 Proj. Ecotope, Inc. **NB - NEEA Impact** Seattle 50,000 41,868 8,133 10/23/2017 Evaluation Portland 6/14/2018 Research Into Action, Inc. Marketing Customer 48,418 10,060 38,359 Insights 5/15/2018 **Residential Windows** 45,000 8,891 36,109 Apex Analytics Boulder Research The Cadmus Group Inc. Assess - Subset Load Watertown 44,480 44,151 330 2/5/2018 Profiles New Home Pilot- DHP 33,380 11/1/2017 **Evergreen Economics** Portland 44,000 10,620 Brightworks Sustainability LLC Net Zero Fellowship Grant Portland 43,500 24,000 19,500 4/5/2017 Agmt **Quality Assurance Services** BASE zero LLC Bend 43.075 37,894 5.181 3/1/2016 Alternative Energy Systems CSEM - PTT 21,521 6/30/2018 Carlsbad 40,000 18,480 Consulting, Inc. 40,000 9/25/2017 The Cadmus Group Inc. Existing Homes DHP Study Watertown 40,000 0 36,593 The Cadmus Group Inc. SEM Impact Pt 2 Watertown 39,110 2,517 3/16/2018 32,583 3/1/2018 MetaResource Group Intel Mod 1&2 Megaproject Portland 35,000 2,417 The Cadmus Group Inc. Air Conditioning Measures Watertown 32,950 22,660 10,290 8/22/2016 **Evaluation - APS Pilot** Research Into Action, Inc. Portland 31,219 23,274 7,945 7/1/2017 Northwest Energy Efficiency Toll Lending Lbry Seattle 30,500 30,500 0 1/1/2018 Council Sponsorship American Council for and Research Sponsorship -30,000 30,000 0 1/1/2018 Energy Efficient Economy 2018 6/10/2018 INCA Energy Efficiency, LLC **Red Rock Evaluation** Grinnell 30,000 0 30,000

Portland

Portland

Portland

25,000

24,990

24,650

12,760

18.744

24,650

12.240

6,246

0

2/1/2018

2/1/2018

4/25/2016

Pay-for-Performance

Klamath Ag Program

Subscription Agreement

Evaluation

MetaResource Group

Sustainable Northwest

FMYI, INC

### For contracts with costs through: 9/1/2018

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Cadeo Group LLC	Evaluation Consulting Services	Washington	24,620	14,586	10,034	5/1/2018	12/31/2018
Consortium for Energy Efficiency	Membership Dues - 2018		23,074	23,074	0	1/1/2018	12/31/2018
Michaels Energy, Inc.	Large NB Impact Evaluation	La Crosse	18,000	1,679	16,322	8/1/2018	3/31/2020
Earth Advantage, Inc.	Sponsorship	Portland	17,750	10,250	7,500	3/1/2017	2/28/2019
Research Into Action, Inc.	Research -MF Energy Savings	Portland	15,360	15,360	0	1/5/2018	6/30/2018
AIQUEOUS LLC	Water Market Study	Austin	15,000	7,500	7,500	6/18/2018	9/30/2018
KEMA Incorporated	New Bldg Evaluation	Oakland	13,000	1,847	11,153	10/1/2017	3/31/2019
American Council for and Energy Efficient Economy	ACEEE Sponsorship - 2018		12,500	12,500	0	1/1/2018	12/31/2018
Cascade Energy, Inc.	PE Custom Track SEM Curriculm	Walla Walla	10,000	0	10,000	7/23/2018	10/31/2018
Consortium for Energy Efficiency	IEM DSM Sponsorship		10,000	10,000	0	3/13/2018	12/31/2018
Research Into Action, Inc.	Review Mesure Dev. Process	Portland	10,000	6,365	3,636	6/12/2018	11/30/2018
Alliance For Sustainable Energy, LLC	Technical Services Agreement	Lakewood	9,609	9,609	0	3/19/2018	11/30/2018
LightTracker, Inc.	Lighting Market Analysis	Boulder	9,000	9,000	0	4/1/2018	12/31/2018
City of Portland Bureau of Planning & Sustainability	Sponsorship - 2018	Portland	8,000	8,000	0	1/1/2018	12/31/2018
Earth Advantage, Inc.	2018 - Sponsorship	Portland	7,750	5,000	2,750	6/1/2018	12/31/2018
Resource Innovation Institute	2018 Event Sponsorship	Portland	7,500	7,500	0	2/7/2018	12/31/2018
Northwest Energy Efficiency Council	BOC 2018 Sponsorship	Seattle	7,300	7,300	0	1/1/2018	12/31/2018
The Cadmus Group Inc.	NB Evaluation Plan	Watertown	6,500	0	6,500	10/1/2017	3/31/2019
Shades of Green	Shades of Green Sponsorship	Portland	5,000	5,000	0	11/6/2017	10/30/2018
Social Enterprises Inc.	GoGreen Sponsorhip - 2018	Portland	5,000	5,000	0	6/12/2018	10/31/2018
Travel Portland	My People's Market Sponsorship	Portland	5,000	5,000	0	5/31/2018	12/31/2018
The Cadmus Group Inc.	Impact Evaluation NB projects	Watertown	4,000	3,994	6	6/18/2018	11/30/2018
	Energy E	Efficiency Total:	100,983,772	62,771,889	38,211,883		
Joint Programs			1	•		1	
E Source Companies LLC	Membership Agreement	Boulder	75,607	75,607	0	1/1/2018	12/31/2018
Structured Communications Systems, Inc.	ShoreTel Phone System Install		70,345	65,287	5,059	1/1/2017	12/31/2018
Infogroup Inc	Data License & Service Agmt	Papillion	26,114	13,057	13,057	2/12/2018	2/12/2020
Research Into Action, Inc.	Trade Ally Survey	Portland	20,000	14,756	5,244	4/24/2018	11/30/2018
Navigant Consulting Inc	Resource Assessment Updates	Boulder	10,600	9,825	775	8/26/2016	8/26/2018
	Joint F	Programs Total:	202,666	178,532	24,135		
Renewable Energy			-	-	-	-	
Sunway 3, LLC	Prologis PV installation		3,405,000	3,261,044	143,956	9/30/2008	9/30/2028
Clean Water Services	Project Funding Agreement		3,000,000	2,013,106	986,894	11/25/2014	11/25/2039
Oregon Institute of Technology	Geothermal Resource Funding	Klamath Falls	1,550,000	1,550,000	0	9/11/2012	9/11/2032

### For contracts with costs through: 9/1/2018

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Farm Power Misty Meadows LLC	Misty Meadows Biogas Facility	Mount Vernon	1,000,000	1,000,000	0	10/25/2012	10/25/2027
Three Sisters Irrigation District	TSID Hydro	Sisters	1,000,000	1,000,000	0	4/25/2012	9/30/2032
Farmers Irrigation District	FID - Plant 2 Hydro	Hood River	900,000	900,000	0	4/1/2014	4/1/2034
Klamath Falls Solar 2 LLC	PV Project Funding Agreement	San Mateo	850,000	382,500	467,500	7/11/2016	7/10/2041
Old Mill Solar, LLC	Project Funding Agmt Bly,	Lake Oswego	490,000	490,000	0	5/29/2015	5/28/2030
City of Medford	750kW Combined Heat & Power	Medford	450,000	450,000	0	10/20/2011	10/20/2031
City of Pendleton	Pendleton Microturbines	Pendleton	450,000	150,000	300,000	4/20/2012	4/20/2032
Deschutes Valley Water District	Opal Springs Hydro Project	Madras	450,000	0	450,000	1/1/2018	4/1/2040
RES - Ag FGO LLC	Biogas Manure Digester Project	Washington	441,660	441,660	0	10/27/2010	10/27/2025
RES - Ag FGO LLC	Biogas Manure Digester - FGO	Washington	441,660	438,660	3,000	10/27/2010	10/27/2025
Three Sisters Irrigation District	TSID Funding Agreement	Sisters	400,000	0	400,000	1/1/2018	12/31/2038
Farmers Conservation Alliance	Program Support	Hood River	367,000	167,555	199,445	1/1/2018	12/31/2019
SunE Solar XVI Lessor, LLC	BVT Sexton Mtn PV	Bethesda	355,412	355,412	0	5/15/2014	12/31/2034
Clty of Gresham	City of Gresham Cogen 2		350,000	334,523	15,477	4/9/2014	7/9/2034
Luxurious Plumbing and Heating, Inc.	Solar Verifier Services	West Linn	250,000	254,834	(4,834)	8/1/2016	9/15/2018
Clean Power Research, LLC	PowerClerk License	Napa	215,478	215,478	0	7/1/2017	6/30/2019
BSA Enterprises Inc	Solar Verifier Services	Sisters	200,000	116,599	83,401	8/1/2016	7/31/2018
Gary Higbee DBA WindStream Solar	Solar Verifier Services	Eugene	200,000	156,194	43,806	8/1/2016	9/15/2018
RHT Energy Inc.	Verifier Services Agmt - Solar	Medford	200,000	183,918	16,083	8/1/2016	7/31/2018
City of Astoria	Bear Creek Funding Agreement	Astoria	143,000	143,000	0	3/24/2014	3/24/2034
Solar Oregon	Outreach Agreement	Portland	135,300	125,400	9,900	1/1/2015	6/30/2018
Wallowa County	Project Funding Agreement	Enterprise	80,000	0	80,000	4/1/2018	3/31/2038
SPS of Oregon Inc	Project Funding Agreement	Wallowa	75,000	74,513	488	10/15/2015	10/31/2036
Kendrick Business Services LLC	Small Business Financial Dev	Albany	60,000	2,775	57,225	8/1/2018	6/30/2020
Kleinschmidt Associates	Evaluation Services	Pittsfield	47,400	47,609	(209)	1/1/2017	11/30/2018
TRC Engineers Inc.	2018 EPS New Const PDC - Solar	Irvine	41,500	26,855	14,645	1/1/2018	12/31/2018
Clean Energy States Alliance	2018 CESA Sponsorship		39,500	39,500	0	6/1/2018	6/30/2019
Clean Power Research, LLC	WattPlan Software	Napa	38,000	38,000	0	11/17/2017	6/30/2019
Craft3	NON-EEAST OBR Svc Agrmt	Portland	30,000	10,250	19,750	1/1/2018	12/31/2018
The Solar Foundation	Workforce Diversity Survey	Washington	27,500	13,750	13,750	7/17/2018	12/31/2018
ENERGYneering Solutions Inc	Biopower & Hydro Evaluations	Sisters	25,000	24,954	46	12/6/2016	11/30/2018
University of Oregon	UO SRML Contribution - 2018	Eugene	24,999	24,999	0	3/9/2018	3/8/2019
Wallowa Resources Community Solutions, Inc.	Renewables Field Outreach		24,999	12,101	12,898	2/1/2018	1/30/2020
Robert Migliori	42kW wind energy system	Newberg	24,125	24,125	0	4/11/2007	1/31/2024

## For contracts with costs through: 9/1/2018

		Grand Total:	138,057,625	86,512,511	51,545,114		
	Renewable Energy Total:		17,862,473	14,525,927	3,336,546		
Seattle University	2018 Mid-Career Inst. Environm	Seattle	5,000	0	5,000	6/22/2018	12/31/2018
Bonneville Environmental Foundation	REC/WRC Purchase 2016	Portland	7,290	4,860	2,430	1/1/2016	12/31/2018
OSEIA-Oregon Solar Energy Industries Assoc	OSEIA 2018 Conf. Sponsorship		7,500	7,500	0	9/1/2017	12/31/2018
Rocky Mountain Institute	Membership Dues	Boulder	8,000	8,000	0	8/15/2018	12/31/2018
Warren Griffin	Griffin Wind Project	Salem	13,150	9,255	3,895	10/1/2005	10/1/2020
Kennedy/Jenks Consultants	Third Party Technical Review	Portland	15,000	15,000	0	6/11/2018	8/15/2018
Site Capture LLC	SiteCapture Subscription	Austin	24,000	12,000	12,000	2/1/2018	1/31/2019

## Tab 8

#### **Policy Committee Meeting**

September 6, 2018 3:30 p.m.

#### Attending at Energy Trust offices

Alan Meyer, Policy Committee Chair, Elaine Prause (Oregon Public Utility Commission), Amber Cole, Michael Colgrove, Fred Gordon, Steve Lacey, Debbie Menashe, Peter West

#### Attending by teleconference

Roger Hamilton, Anne Root

#### **Board Member Resignation**

The committee discussed the recent board member resignation and the process by which board members were engaged in communications about the event. Energy Trust staff and board president Roger Hamilton worked closely together to respond to questions and concerns regarding the resignation and Eddie Sherman's resignation email. Committee members discussed the importance of timely responses and methods to bring board members together and asked staff to consider how to build in wider engagement of the board in such situations. Staff will consider how to incorporate this feedback. In addition, and included in the agenda for this committee meeting, Alan Meyer and Roger have discussed the idea of appointing an Executive Committee consisting of the officers of the board, as subset of board members who can be convened to meet in between board meetings. Roger and Alan discussed how a structure like an executive committee could be one way to provide a forum for board engagement in similar situations, and committee members agreed.

#### Policy for Review-Balanced Competition Policy 4.09.000-P

Debbie Menashe presented the Balanced Competition Policy to the committee for its regular threeyear review. Staff reviewed the policy and does not recommend any substantive changes, but some revisions for clarity were recommended. The committee reviewed the proposed revisions and recommends that they be presented to the full board for approval through the October meeting consent agenda.

#### Role of a Possible Executive Committee

Alan referred committee members to the memorandum on creation of a possible Energy Trust Board Executive Committee that was submitted with the committee materials in advance of this meeting. Committee members discussed the utility of an executive committee and requested that staff prepare a draft resolution to appoint such a committee with the following parameters: (1) The proposed committee would consist of the board officers, (2) be authorized to act on behalf of the board, to the extent permitted by law and Energy Trust bylaws, in between full board meetings, and (3) that any actions of the executive committee be ratified at the next board meeting. Committee members did not recommend a standing executive committee schedule at this time. Elaine Prause suggested that an annual meeting with the Oregon Public Utility Commission staff and others may be appropriate for an executive committee, and committee members expressed interest in this type of meeting.

At Alan's request, Debbie will prepare and circulate to committee members and to Susan Brodahl and Mark Kendall, current officers of the board who are not currently Policy Committee members, a draft

proposed board resolution to appoint an executive committee consistent with the parameters described above.

## Consent and Appointment of Members to the Conservation and Renewables Advisory Councils

Staff presented biographical information on Anna Kim, OPUC liaison to Energy Trust and Oriana Magnera, outreach and policy advocate for the Northwest Energy Coalition. Anna is recommended for appointment to the CAC and RAC, and Oriana to the RAC. Committee members approved both recommended appointments.

### Initial Discussion of Proposal to Amend the Bylaws to Remove References to Chief Financial Officer

Staff discussed changes to the chief financial officer position in the organization and implications for the organizational bylaws. The current bylaws permit the appointment of a "Chief Financial Officer" (CFO) and require certain actions in finance reporting by a CFO, if one is appointed. In August, the CFO position and Management Team structure were revised. The organization no longer has a CFO position, and staff would like to discuss possible changes to the bylaws so that they are consistent with this change. No recommendation was made, but staff started discussion so that proposed changes can be drafted and brought back to the Committee at the October meeting. Committee members expressed support for moving forward on amendments and will asked staff to prepare proposed changes for their review.

#### Update on Net/Gross Savings Reporting

Fred Gordon updated the committee on internal planning and discussions with OPUC staff about reporting Energy Trust savings results in gross rather than net. Energy Trust would continue to evaluate programs and savings, but reporting would not be adjusted for free ridership and other factors. Elaine said that the process and planning for this reporting change is expected to be documented in the budget. Planning for changeover will occur through 2019, with the revised reporting approach to begin in 2020. Committee members expressed support for the concept.

#### Meeting adjourned at 5:00 p.m.

Next meeting date is Thursday, October 4, 2018, at 3:30 p.m.

## Tab 9

#### **Strategic Planning Committee Meeting**

August 20, 2018 - 12:00 pm

#### Attending by teleconference

Janine Benner, Susan Brodahl, Roger Hamilton, Lindsey Hardy

#### Attending at Energy Trust offices

Mark Kendall - *Strategic Planning Committee Chair,* Michael Colgrove, Hannah Cruz, Cheryle Easton, Fred Gordon, Debbie Menashe, Lizzie Rubado, John Volkman.

#### **Review of Strategic Plan Development Calendar**

The committee reviewed the current version of the strategic plan development calendar. Committee members suggested that utility meetings at which the strategic plan development would be discussed should be added to the calendar, and staff will add those dates. Staff will proceed to use and build out the calendar.

#### Review Status of Strategic Plan Development Work and Engagement to Date

Staff reported to the committee on its initial engagement with the Conservation Advisory and Renewable Advisory Councils. Staff engaged the councils in a joint lunch meeting to discuss and review Energy Trust's Strengths and Capabilities map. CAC and RAC members discussed the map and provided input and suggested revisions. Staff has revised the map and will send out a revised version to CAC and RAC for their review.

Staff then asked the committee for input on the revised Strengths and Capabilities map. Committee members discussed the purpose of the Strengths and Capabilities map and whether it is the place to provide a picture of Energy Trust as a whole or a tool for plan development. Committee members also expressed a strong interest in ensuring that the map provides specific information. Staff directed committee members to the list of definitions and explanations attached to the map as a place to provide more specific information.

#### **Review Current Unique Role of Value Statement**

Staff also presented a current draft of an Energy Trust "current role of value" statement. Committee members provided helpful and detailed input, and staff will take committee comments back and revise the statement.

The committee and staff discussed how the Strengths and Capabilities map and the current unique role of value statement are building blocks on which to ground the development of the draft strategic plan. The purpose of the current role of value statement is to ground the discussion for consideration of future roles and corresponding needed strengths and capabilities starting from where the organization is now.

The committee concluded with some discussions about public engagement planning.

#### Next Compensation Committee Meeting: October 30, 2018, 10:00 a.m. – 12:00 pm.

# Tab 10



#### **Conservation Advisory Council Meeting Notes**

#### August 1, 2018

#### Attending from the council:

JP Batmale, Oregon Public Utility Commission Holly Braun, NW Natural Will Gehrke, Citizens' Utility Board of Oregon Danny Grady, City of Portland Bureau of Planning and Sustainability Kari Greer, Pacific Power Charlie Grist, NW Power and Conservation Council Julia Harper, Northwest Energy Efficiency Alliance

#### Attending from Energy Trust:

Kathleen Belkhayat Mike Bailey Quinn Cherf Amber Cole Mike Colgrove Ryan Crews Chris Crockett Hannah Cruz Becky Engel Sue Fletcher Fred Gordon Jackie Goss Oliver Kesting Jessica Kramer Steve Lacey

#### Others attending:

Jon Eicher, ICF Beth Glynn, Cascade Energy Lindsey Hardy, Energy Trust board Karla Hendrickson, ICF Rick Hodges, NW Natural Anna Kim, OPUC Joe Marcotte, LM Energy Jason Klotz, Portland General Electric Roger Kainu, Oregon Department of Energy (for Warren Cook) Oriana Magnera, NW Energy Coalition (for Wendy Gerlitz) Lisa McGarity, Avista Kerry Meade, Northwest Energy Efficiency Council Dave Moody, Bonneville Power Administration Al Spector, Cascade Natural Gas

Scott Leonard Spencer Moersfelder Alex Novie Jon Pauly Amanda Potter Thad Roth Kate (Scott) Wellington Kenji Spielman Cameron Starr John Volkman Katie Wallace Peter West Mariah Wills Mark Wyman

Alan Meyer, Energy Trust board John Molnar, Rogers Lonny Peet, Nexant Whitney Rideout, Evergreen Susan Steward, BOMA Josh Weissert, Energy350

#### RAC/CAC Joint Session: 2020-2024 Strategic Plan Development

Prior to the meeting, members of the Conservation Advisory Council and Renewable Energy Advisory Council met with staff working on development of the 2020-2024 Strategic Plan. The joint meeting included an interactive discussion on Energy Trust's unique strengths and value to the marketplace. Facilitator Holly Valkama opened the session and John Volkman introduced the process for developing Energy Trust's 2020-2024 Strategic Plan. Compared with past plans, which have focused largely on quantitative energy goals, the strategic plan in development will consider qualitative goals as well. The planning process will incorporate a staged approach to develop various components of the plan.

RAC and CAC members contributed to the first stage of the strategic planning process by participating in an exercise to revise a draft "strengths and capabilities map" about Energy Trust. John reviewed a preliminary map of strengths with the group, which included scale, credibility, design and execution, and innovation. The members gathered in small groups to discuss the map and report feedback and recommended changes.

Some groups proposed additional strengths such as money management, nonprofit status, transparency, customer satisfaction and Energy Trust's key position in an ecosystem of other clean energy-focused organizations. Other groups wanted to qualify strengths or discuss how they might evolve over the course of the strategic plan. For example, a few groups called out innovation and credibility as characteristics that should be considered in context and may take on new meaning over time.

A revised map incorporating the members input will be provided to the councils before the October CAC and RAC meetings.

#### 1. Welcome, Old Business and Short Takes

Hannah Cruz convened the meeting at 1:44 p.m. The agenda, notes and presentation materials are available on Energy Trust's website at <u>www.energytrust.org/about/public-</u><u>meetings/conservation-advisory-council-meetings/.</u>

Tony Galluzzo from BOMA will step down from his role as a CAC member, and BOMA is identifying a replacement representative for staff to send to the board Policy Committee for approval. Hannah described Energy Trust's budget and action planning process underway for 2019. CAC members should expect to discuss the draft action plans at September's meeting. Hannah also updated CAC members about the findings of a performance audit conducted by the Oregon Secretary of State's office. The audit evaluated the Oregon Public Utility Commission's (OPUC) oversight of Energy Trust, with a focus on administrative costs. The auditors found that Energy Trust's administrative costs were reasonable.

#### 2. Production Efficiency Program Delivery Contractor RFP Results

Production Efficiency Sector Lead Amanda Potter reviewed the results of a competitive request for proposals for three Production Efficiency program delivery contractors and the Energy Trust board decision to approve contracts with Energy 350, Cascade Energy and RHT Energy Solutions. Energy Trust received multiple proposals for each territory.

Holly Braun: What were the savings of the custom track?

Amanda Potter: The custom track contributes 50 percent of electric savings and 70 percent of gas savings.

Holly Braun: How did you differentiate the first criteria for selection, "energy and costs savings," from "strength of proposal"?

Amanda Potter: The first criteria was around price and our confidence in the contractor's ability to deliver energy savings.

Peter West: You can see more detail on our website about how we evaluated each category.

Amanda noted that all three contract winners presented strong industrial energy efficiency experience, cost-effective proposals, clear strategies to achieve energy savings and evolve the program, and new ideas on how to reach diverse and underserved customers.

Oriana Magnera: You said the proposers you chose had strengths in diversity, equity and inclusion. What did their proposals include?

Amanda Potter: The winning bidders demonstrated strong organizational commitments to diversity. They had set diversity goals and expanded their hiring practices to bring in diverse candidates. They also described their abilities and strategies to reach diverse customers. Small-to medium-sized businesses and rural customers have been a key focus for the Production Efficiency program, and was a focus in the proposals.

#### 3. 2019 Measure Reviews: Introduction and Overview

Director of Energy Programs Peter West introduce the topic of measure reviews, and Engineering Manager Mike Bailey provided an overview of measures that staff are reviewing for 2019, including changing measures, expiring measures and new measures or pilots.

Peter noted that today's presentation contains preliminary analysis and therefore is still under development. However, staff wanted to bring this topic to CAC now in the spirit of providing information earlier. Mike shared an overview of the reviewed measures, and then identified two areas where trends are influencing measure decisions, specifically around lighting and water conservation. Peter said staff use this measure analysis process to know when to exit a market.

Dave Moody: What irrigation measures are being mentioned on the slides? Jackie Goss: Previously we had cost-effectiveness exceptions for seven measures. With reanalysis, five measures are cost effective, one measure we are gathering more information about and one measure we're canceling. We're asking for an exception for drop tubes.

Jason Klotz: What's the total resource cost on direct install? Mark Wyman: It's a moving target with variability.

Lisa McGarity: For some of these standard lighting measures that are expiring, could they move into custom, such as industrial lamps?

Mike: Possibly. For lamps, some may be included in other lighting measures.

Peter: In certain circumstances, the measure may work as custom, but not on a mass scale. For most customers looking at these it's not a cost-effective solution.

Mike explained the effects of the federal Energy Independence and Security Act (EISA) on lighting cost-effectiveness and the uncertainties around whether the law will be implemented in 2020 as currently written.

Holly Braun: Overall market trends seem bigger than the impact of EISA. The market is just moving to LEDs. Is EISA a secondary driver, not the catalyst for the market transformation? Mike: Market adoption is why savings from lighting have declined the way they have been.

Holly: If EISA is capturing laggard adopters, discounting LEDs will only capture the last laggard portion of the market. Would the savings projected only capture laggards? Mike: It's a different approach than that. We ideally would target those customers who have not yet switched to LEDs. But as part of our program design, we're offering LED lighting as a standard product for everyone going to Lowe's or Home Depot. It's a standard incentive, so as savings decline, we decrease incentives. Price is also declining from the manufacturers, so it's compelling for someone to buy LEDs.

Peter: When you look at the future, you also have to consider what product options are available to people who have already adopted LEDs. They could revert back to halogen products in their future purchases. We have to consider what will early adopters do in their next round of purchases. So if they have adopted LEDs, and then EISA is in place, they're already going to be in the market.

JP Batmale: What's the magnitude of savings for the programs impacted?

Mike: EISA impacts residential lighting savings more than commercial.

Whitney Rideout: For the Existing Multifamily program, other than direct install, EISA-impacted lighting is 18 percent of total program lighting, and 10-12 percent for the Existing Buildings program.

Thad Roth: In 2017, the Residential program had 115 million kilowatt hours in savings from lighting; this year it's less than 30 million and 2020 will be less.

Ryan Crews: Mike is showing general purpose and reflector lights because those are the two big categories, which make up 75-80 percent of lighting sales but other categories are impacted as well. What it means is that in 2020 there is a chance we'll have no cost-effective lighting savings. Or it will be very small. Five million kilowatt hours might be optimistic.

Lisa: I read in a report that low-income households generally have at least 50 percent incandescent lighting in their homes. Is there a way that we can have equity in that market? Mike: We do sell through Dollar Store and other outlets to provide efficient lighting options for low-income customers. Part of the challenge with studies like this is that there is a time lag between when items are installed in sockets and what's in the market. People across different incomes are buying LEDs, but if the federal standard goes in effect, no one will be able to buy incandescent or halogen. Incandescent bulbs have short life spans, so the market will replace those in a year or two. With incentives, the current costs are \$1-\$2 for an LED bulb. The price has been falling year over year. They now are more affordable.

Mike explained that for 2019 budgeting, Energy Trust will assume that EISA will be repealed or delayed based fn prior experience with implementation of other technology standards. If EISA remains in place in 2019, it will make planning for 2020 difficult. In the spring of 2019, staff will begin to formulate a plan for transitioning lighting support in 2020. Staff is talking to manufacturers as well as to retailers, which will have to plan for shelf stocking months in advance. Staff hopes to find out from retailers what they plan to stock, to give some indication of market demand.

Holly: It doesn't feel good as a CAC member to say that a law on the books will be delayed or repealed. It seems more prudent to assume it will stay in place. I understand you saying that your logic is that you hope the law gets repealed because the program has more value in that condition.

Fred Gordon: A few years ago, I advocated that we not assume that EISA would take effect. Our job is to make sure standards get passed because they're the most cost-effective way to get savings. If we had done work to slow down LEDs before now, we would have slowed down our impact on the market prematurely. If we and our peer organizations around the country did this, it might reduce market acceptance and thus reduce the chance that the standard would hold. We're saying our role is to walk up to the day that standards go into effect and we may influence what happens. The federal government has proved to be unpredictable with past standards. For example, we built plans around T8 standards that we helped promote, but the standard had a loophole that prevented it from being effective. We don't assume we're going to know what the federal government will do. Alan Meyer: Would an alternative approach be to ask the OPUC for a cost-effectiveness exception that says that if EISA passes we're out of the game and we offer an incentive if given a cost-effectiveness exception?

Anna Kim: Why?

Alan: We're showing numbers that look good now but won't look good later. We're accelerating the pace of transformation.

Holly: I'm hearing there are impacts this year because when we do planning in 2018 for 2019 we have to make assumptions for 2020 for replacement. What happens in 2020 impacts today's cost-effectiveness. We need to have more transparency and integrity. It's not cost effective but it's the right thing to do in 2019.

Peter: Rather than an exception, we also could ask the OPUC if they are comfortable with the use of our assumption, and iterate on that assumption. We stay in this market, and it doesn't matter if EISA is repealed or not, because we've transformed the market. If we exit the market too early, like we did with CFLs, and then EISA is delayed, we would lose savings and relationships with retailers. When you're trying to guess timing and you're working with retailers, they have a memory and they won't forget the decisions we make.

Alan: We don't question whether we should get in the discussion, it's just the premise of the assumption.

Peter: We will talk with the OPUC to decide if there needs to be an exception, and if they're comfortable with our assumptions.

Holly: If we could get something on the books, it would make me feel more supportive. Mike: This is some of the internal challenge we deal with. We're trying to predict the future, and we don't know.

JP: This would be a major cost-effectiveness exception, which must go in front of the commissioners. It would not be a staff decision. It is good to have a conversation with others at the OPUC to provide some assurance that OPUC staff are in alignment with the assumption. The flip side is you go through an official cost-effectiveness exception process, but I can't guarantee the outcome will be what you want.

Dave: There's risk involved. You have changing technologies and standards, and if Energy Trust couldn't operate until standards change, that upends the apple cart. This is a big example. The goal is standards. If the calculus is that programs operate only when they're standards, that's a big tranche of the portfolio that would be challenging.

[Post meeting note: Energy Trust met with OPUC staff on the assumption of EISA not going into effect as written. Energy Trust included a lighting trends appendix in its Quarter 2 report submitted to the OPUC on August 15, and presented on these trends as well as the EISA assumption to the commissioners in late August. The commissioners and staff supported the use of the assumption. The appendix can be found on Energy Trust's website at <a href="https://www.energytrust.org/wp-content/uploads/2018/08/ETO.Q2.18.Quarterly.Report.pdf">https://www.energytrust.org/wp-content/uploads/2018/08/ETO.Q2.18.Quarterly.Report.pdf</a>.]

Mike discussed water-savings measures, trends and changes. Water conservation measures are some of Energy Trust's oldest measures. He shared various modeling assumptions and energy savings that come from faucet aerator measures.

Lisa: What is the market penetration for this measure?

Mike: We found 800,000 installs of aerators over the last 10 years. We know a portion of those were for new construction, and some for existing homes. We have changed specifications over

time. Because of that, we may have replaced aerators that we previously installed. I don't have a specific percentage of the market. We will send that after the meeting.

[Post meeting note: Staff estimate there are approximately 7 million faucets in Energy Trust service territory and program volume of 800,000 aerator installations is just over 11 percent of the market. There is some uncertainty in these numbers due to different estimates on the number of faucets per home and estimates of faucets in commercial buildings, and the market share range is estimated between 10 and 15 percent.]

Peter: You asked what the scenarios are. Mike focused on the most uncertain ones and tested out the range. One could argue that the Regional Technical Forum picked the most conservative end of the spectrum, but it's still cost-effective. Our proposal is to stick with the RTF if it stays cost-effective. We may be misunderstanding the range of savings, but it didn't change the answer that the measure is cost-effective. If it dips below the line, we'll have a conversation about what that assumption should be.

Mike expects that for 2019, water measures are expected to be cost-effective.

Holly: Back to the bulbs, since we are an advisory committee, I understand what you're saying is that if the EISA law stays, then 2019 isn't cost effective, and therefore something should be done. That doesn't feel good to say we hope it gets repealed because that way we'll be cost effective. I want to go on the record with that comment.

### 4. 2019 Measure Reviews: Existing Multifamily Program Market Research and Early Discussions

Existing Multifamily Program Manager Kate (Scott) Wellington reviewed findings from a market analysis and presented the early discussions staff are having about opportunities and impacts for the program. Kate described work underway to understand the total multifamily market in Oregon and current participation rates, using internal and external data sources to provide insights. Staff wanted to learn what Energy Trust has done well and where there is still participation opportunity, so the program can target outreach for identified customer groups. Findings indicate that both project type and customer targets are changing.

Kate described the makeup of Energy Trust's multifamily customers, including types of units most common in Energy Trust service territories (e.g. duplex, triplex, multiunit, etc.), the geographic breakdown of these units, building occupancy trends, and the breakdown of eligible customers in various market segments (e.g. market rate, affordable housing, etc.). Energy Trust used this market data to determine program participation across all types of program tracks – buy down, custom, direct install, lighting and prescriptive.

Al Spector: Are you presenting the percentage of housing that qualifies across the state, or is it 13 percent of available housing?

Kate: It's of those structures in those regions, how many have participated in the region.

Kerry Meade: Did you look at the ages of buildings, and is that data relevant? Kate: We did look at ages, but I chose not to present it. It was fairly widespread. The largest stock is 1970s and 1980s. We can get the full breakdown together at another date for you.

Kate discussed direct-install trends for multifamily. This is the most common first offering multifamily customers take advantage of with Energy Trust. The average size of direct install projects has decreased over the last several years because Energy Trust has served many of the larger properties throughout the state, and has increased focus on serving smaller

properties with fewer units. With uncertainties in lighting in 2020, staff will watch how this impacts multifamily measures.

Holly: Do overall savings go down or just the overall percent? Kate: Overall percent.

Lisa: When you work on direct install for smaller units, will that increase your overall costs? Kate: The average size of a direct install project has changed over time. In 2014, those projects averaged 25 units per site. In 2017 the average site size was 13 dwelling units. There has been a strong shift in reaching smaller units. The cost of acquisition increases with smaller units because there is a fixed cost to find these leads and go out to the sites. Lisa: Will that put pressure on the program? Kate: Yes.

Kate also described the overall Existing Multifamily program, its cost-effectiveness, and discussed considerations for 2019, including direct install measure savings reductions from aerators and lighting. Energy Trust plans to evaluate opportunities to redesign the direct install track for 2020, with an eye on how to stay cost effective in the face of savings decreases and rising cost of acquisition.

Kate mentioned the diversity, equity and inclusion lens that Energy Trust is applying for multifamily. Staff have evaluated affordable housing data, geographic data about participation and data about customers with low incomes. In its evaluation, staff found that participation rates were equal between low-income zip codes and overall zip codes; however, direct install and buy down was more popular for those low-income sites because the cost is lower, and larger projects were less common.

Peter: We anticipate hitting our goal because of targeted efforts in multifamily. The future of direct install is a focus. Aerators can't stand on their own as a direct install measure unless we change how we are doing them. We need to look at how we can rearrange the program in 2020 to reach customers that we haven't reached yet. Some customers may not be able to be reached in a cost-effective way, the way we're reaching them today.

JP: Residential was successful at restructuring based on market trends. Can that be done in multifamily in one year?

Peter: We don't know yet. We will do more analysis and see what we learn. It was a multiyear effort to restructure residential, culminating in a complete reorganization by the team. It might mean in 2020 we have to ask for a cost-effectiveness exception for the Existing Multifamily program. We've never done that. It is to be determined.

Charlie: Would it be helpful to think about where the remaining potential participation is? If you segmented based on what you could get for cost-effective participation, and which of those markets are lagging in participation currently, and then looked at how to go get that?

Lisa: On the direct install savings trends, it looks like gas was successful in converting customers over to prescriptive.

Kate: Yes, prescriptive has done well. There also was a showerhead flow rate study that had large showerhead savings reductions, which was applied to 2017 savings numbers, specifically gas. For electric, common-area lighting was a big driver for savings.

CAC took a break from 3:40 – 3:55 p.m.

#### 5. 2019 Measure Reviews: Residential Heat Pump Water Heater Incentive Change

Residential Program Manager Ryan Crews provided information on midstream water heater results. He described how the water heater market has changed in 2018 and requested input on a proposed incentive increase for heat pump water heaters. Current participation rates are below forecast for both electric and gas water heaters.

#### Holly: Did retailers stock up in Q4?

Ryan: Yes, stocking could have been one variability.

Holly: The numbers are so much more dramatic in Q4. It would seem it would take time to work through the inventory. Is the drop in Q1 because retailers have to work through that inventory? Ryan: These are actual sales, not stock.

Charlie: That makes it even more unbelievable. I question the data.

Ryan: The spike represents some reporting lag. Typically there are two data points reported in Q1 and Q4. While there were units sold in Q3, they weren't reported until Q4, so there is a lag in the data, which exaggerates the spike. However, there's still a clear drop-off in 2018.

Charlie: What's missing from this data is the whole market. This only shows us efficient water heater units. This chart would look different with that full market data. Ryan: Yes, this is only efficient units coming through our program.

Ryan described that the drop-off could also be attributed to NEEA discontinuing its manufacturer incentive, as well as state and federal tax credits. Manufacturers also increased prices due to steel tariffs and cost of materials. All that happened in Q1 2018. Customers' price increased by \$300 in this timeframe.

Holly: Why did NEEA drop the incentive?

Julia: The price had come down significantly on the units, and some utilities in the alliance wanted to put incentives on them. They have their own programs. Not so much in Oregon, but for utilities in the other states this was the case.

Holly: Were they able to pay the difference in incentive themselves?

Julia: Some of them are. Also, while we stopped paying a per-unit incentive, we are doing a marketing incentive to manufacturers.

Alan: If people knew incentives were going away, would it pull forward purchases in 2017? Ryan: Yes, possibly. However, there are not a lot of people who replace a water heater before it breaks. Some customers may have had that foresight, but likely not the full number of people represented here.

Fred: How much did pricing changes affect overall market pricing? Was it a disproportionate cost increase for only efficient units?

Ryan: No, it impacted all units, but proportionally less impact on non-efficient units because they have a lower starting retail price and the price increases were typically done as percentages.

Holly: How does the installer fit in if I buy at Home Depot and choose the unit myself? Is that not the midstream segment of the chain?

Ryan: Distributors sell to contractors, and they stock based on demand. If you have demand you can pull distributors and retailers with you.

Holly: This installer comment is more for distributor not for retail? Ryan: Yes.

Ryan described the program's proposed actions. These include marketing and direct mail efforts to reach customers and drive them to installers who are familiar with the technology and can install it. Energy Trust also could increase its incentive by \$200.

Holly: How does that help the installer feel more motivated?

Ryan: It doesn't help that, but it makes it an easier sell. It's easier to sell an \$800 unit versus a \$1,000 unit.

Holly: The hurdle sounds like it is on the install margin?

Ryan: It is a mixed bag. It's harder to sell something that's more expensive. The other part is installation complications.

Will Gehrke: What about a payment direct to the installer?

Ryan: The way the incentive is structured, installers control how much of the incentive they pass through to customers. Once it hits installers, they could keep it all. In practice, most of the incentive usually does get passed down to the customer.

Jason: We looked at these numbers at PGE, and what we could put down for incentives. We can put \$600 in incentives for demand response water heaters. We want to talk about how to work with you to make that work with NEEA and OPUC for direct install.

Fred: The question is whether the measure is cost effective. We're serious about giving it a shot to see different streams of install work. If we can make direct install fly, how do we pay for all of it? We don't know.

Peter: I appreciate it, but we have to figure it out.

Jason: We'd like to create a forum to discuss this.

Charlie: One of the things we've seen historically with industry manufacturers and incentive programs is manufacturers set their costs nationally, with regard for what's going on in incentives. If they see more incentives, they will increase cost. You indicated that prices have gone up because of materials costs. That's a big jump for that amount of materials. Ryan: Manufacturers saw an opportunity to increase cost.

Charlie: There are incentives in efficiency so it's a wash. Until they start lowering prices themselves, we have some questions about incentives and the impact. I'm supportive of increasing incentives, but it's just a shift in cost. It'd be interesting to look at efficient unit sales but also what percentage of efficient sales are of total available market. I think it's in the 3 percent range. It's a long way away from where we should be from a planning process. We're in an early spot in the market. It may have been a premature retreat from the support by NEEA.

Holly: Are retailers losing interest because point of sale got tricky?

Ryan: I haven't heard that from retailers. They often make manufacturers do that work for them. An assumption is that retailers are motivated by demand and sales. If they don't see customers coming in for water heaters, or efficient water heaters, they're not using up the shelf space. Getting price down, and making it an easier decision, may motivate retailers to keep stock.

Holly: I would assume retailers are losing interest. Have we talked to them?

Ryan: More insight would be helpful. This is based on early talks with retailers.

Holly: More insight into what their perspective is would be good.

Julia: Retailers make money when they move volume. If the market has dropped off, that's a driver.

Dave Moody: Our conversations at BPA match these comments and insights. Price and volume play, and it takes a lot of shelf space for water heaters.

Ryan: Asking them is a wise decision, and we'll do that in September at the ENERGY STAR partner meeting. There could be other things on the retail side we can do, and on the install side, to create the demand we want to have.

Alan: Volume dropped off, but I don't see that. I see a spike. Ryan: I worry that waiting to find out is bad. If we can be pre-emptive and fix it before it gets worse that'd be good.

Julia: NEEA is doing things to get installers over their resistance to change. We're giving them water heaters to install in their homes to get them experience with the benefits and how to install them.

Holly: Has that been working?

Julia: We've had early positive results.

Peter: I hear interest from the group to move forward but that we need to report back. We need to get more information from installers on their behavior.

#### 6. 2019 Measure Reviews: Irrigation Measure Update

Industry and Agriculture Senior Program Manager Jessica Kramer provided an update on the status of irrigation measures. There are currently 15 irrigation measures ranging from gaskets to sprinklers to drains. Because of recent updated data, one measure in 2018 and four in 2019 have been deemed cost effective. One measure that was going to expire in 2018 is now above a 0.8 benefit/cost ratio, and Energy Trust staff understands that the OPUC exception for this measure will be approved.

These measures became cost effective for a variety of reasons. Analyses from both the Regional Technical Forum and Energy Trust found that operating hours changed dramatically from 1,000 hours to 1,600 hours for Western Oregon. Additionally, changes in flow rates and pump heads were influencers.

Two measures expire in 2018. As part of the exit strategy for those measures, staff is providing information to vendors about the expiration, and are working with them to ensure they have time to complete sales and encourage customers to submit paperwork by the end of year.

#### 7. Pay for Performance Pilot Evaluation Findings

Commercial Program Manager Kathleen Belkhayat and ICF Engineering Manager Jon Eicher presented an overview of the commercial Pay for Performance pilot and evaluation. The pilot has seen no enrollment in 2018, because of lack of customer and contractor interest or building eligibility. In evaluating barriers to enrollment, staff discovered that contractors believe a wider audience could benefit from this, such as schools and government buildings, which were the not the original target market Energy Trust selected. Making the business case to participants was also a challenge, and differentiating it from other Energy Trust initiatives such as SEM was difficult. Staff also heard in the evaluation that the application process and timeline were more than contractors would have liked.

Anna: Do you have requirements for whether people could make dramatic changes to a building? Would regression modeling work in these cases?

Kathleen: The challenge is we want a well-behaved building. Is there such a thing? If we got buildings with less variability the regression modeling would work. We had thresholds on occupancy and changes in building operations.

Kathleen requested input from the CAC around the goal of the program, the value that Energy Trust can deliver to the customer, and what outcomes we want to get out of the pilot, considering redundancies with other programs. Target audience is also of consideration, as is

payment structure and eligibility. Input will be sought from CAC at a later date due to meeting time constraints.

Kari Greer: You have no customers participating? Didn't we think there were customers who would do this?

Peter: Through legislative direction from the OPUC we did this offering. Presumably there were customers advocating to do this.

Oliver Kesting: One customer is done from the pilot and is paid out fully (phase I).

Julia: Was measure-level cost effectiveness a barrier?

Josh Weissert: Most buildings we approached were doing SEM so they weren't eligible. If they did SEM they couldn't do Pay for Performance because they can't do both.

Oliver: They're duplicative. SEM serves the same role but is just for larger customers.

Holly: What if we asked the SEM customers what else they'd want to do? In order to have a conversation [to help you make decisions], we [on CAC] might need to have some SEM information, so we understand how SEM and Pay for Performance are distinct and what else is left on the table.

Oliver: What's missing is an offering for smaller customers and a payment option over more than one year. SEM pays end of each year for savings we identified. For Pay for Performance, we're paying over time for those same savings. We heard that's what they wanted. We aren't seeing they want that, however.

JP: Does commercial SEM allow for capital measures? Oliver: Yes.

#### 8. Public Comment

There was no public comment.

#### 9. Meeting Adjournment

Hannah noted Energy Trust's Quarter 2 report will be released August 15. The report will be distributed to CAC, and members are encouraged to read the report and pose questions at the next meeting.

There were no changes to the June notes.

The meeting adjourned at 4:58 p.m. The next Conservation Advisory Council meeting will be held Friday, September 14, 2018.

## PINK PAPER



#### **Conservation Advisory Council Meeting Notes**

#### September 14, 2018

#### Attending from the council:

Anna Kim, Oregon Public Utility Commission Holly Braun, NW Natural Danny Grady, City of Portland Bureau of Planning and Sustainability Kari Greer, Pacific Power Charlie Grist, NW Power and Conservation Council Jeff Mitchell, Northwest Energy Efficiency Alliance

#### Attending from Energy Trust:

Mike Bailey Amber Cole Mike Colgrove Ryan Crews Hannah Cruz Oliver Kesting Jessica Kramer Steve Lacey Alex Novie Amanda Potter Thad Roth Kate (Scott) Wellington Cameron Starr

#### Others attending:

Lindsey Hardy, Energy Trust board Karla Hendrickson, ICF Rick Hodges, NW Natural Alan Meyer, Energy Trust board John Molnar, Rogers Machinery Josh Weissert, Energy350 Mike Christianson, Energy350 Jason Eisdorfer, Oregon Public Utility Commission Warren Cook, Oregon Department of Energy Jason Klotz, Portland General Electric Wendy Gerlitz, NW Energy Coalition Lisa McGarity, Avista Dave Moody, Bonneville Power Administration Al Spector, Cascade Natural Gas

Peter West Mariah Wills Tom Beverly Shelly Carlton Sarah Castor Mana Haeri Andy Giguen Denise Olsen Dan Rubado Adam Bartini Marshall Johnson Jessica Iplicki Jay Olson

Julie Peacock, Oregon Public Utility Commission Elaine Prause, Oregon Public Utility Commission Colin Podelnyk, ICF Dan Reese, CLEAResult Angel Swanson, ICF Mark Kendall, Energy Trust board

#### 1. Welcome, Old Business and Short Takes

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

Hannah introduced Anna Kim, new OPUC liaison to Energy Trust and Conservation Advisory Council member. Prior to joining the OPUC, she worked for evaluators for Energy Trust, then Seattle City Light. She brings experience and expertise in energy efficiency. Anna Kim: Energy Trust has been a big part of the landscape in this field, along with the professional environment in Portland. You've had a strong influence.

Hannah noted staff is working with Building Owners and Managers Association on a potential replacement Conservation Advisory Council member.

Hannah presented the strengths and capabilities map, which was revised with Conservation Advisory Council feedback and will be used by staff as they develop the 2020-2024 Strategic Plan. Hannah provided a schedule to of upcoming engagements on the development of the plan. Strategic plan development will run through May 2019, when a draft of the plan will be presented to the board of directors. The board is looking for Conservation Advisory Council member advice and feedback, and there will be various sessions when staff engages with Conservation Advisory Council on the plan. This may mean a few extra hours asked of members over the next six months. We haven't set 2019 meeting dates, so we'll revise the list of meetings and resend the schedule.

#### 2. Northwest Power and Conservation Council Underserved Populations Study

Charlie Grist from the Northwest Power and Conservation Council presented a summary of the council's "Northwest Underserved Energy Efficiency Markets Assessment" report.

## A copy of the assessment is posted on the Council's website at <u>https://www.nwcouncil.org/reports/northwest-under-served-energy-efficiency-markets-assessment</u>.

Charlie Grist: This is a quantitative look at the markets, and the first time we've done it this way. Marti Frank, who specializes in diverse and underserved markets, conducted it for us. Our goal is to tap all cost-effective conservation, but you can't get to all of it if you're leaving segments untapped. We know there's untapped potential across the region. As analysts, we decided to take a quantitative look at how we're doing. The study was equity based. The council facilitated and organized the process, and Bonneville Power Administration (BPA), Energy Trust, utilities and other organizations did much of the work. This looked at 2014 to 2016.

We didn't get full participation by all utilities and programs in the region. BPA, Energy Trust, Pacific Power, Northwest Energy Efficiency Alliance and many others put significant effort into it. Each provided their own report, all of which are appended at the end of our report. We worked on participation rates and participant distribution. We saw a participation rate of 1.8 percent for homeowners and 0.1 percent for renters. We looked at the total population of renters versus owners by utility territory.

One of the key goals to look at were what data sources were available to do this work. We got participant data from utilities and compared them against data services that Energy Trust and utilities use from credit raters. We found that race and ethnicity are an add-on data collection effort with extra costs involved, so not everyone collects that information.

One noteworthy item is that every utility territory is different. The energy efficiency resource isn't necessarily homogeneously spread across the population. For example, lightbulbs are spread evenly across everyone, but not everyone has an electric water heater or the right house for a ductless heat pump. You have to go after the savings where you can get them.

We saw participation rates of 1 to 8 percent, with the highest being on the residential side. Manufactured homes had the highest cumulative participation rates compared to single family and multifamily. When everyone had been very active with duct sealing for manufactured homes, it showed up in the data. BPA did a lot of work because it has so many member utilities. Participation rates in BPA utilities closely matched each income level. Customer participation ranged from free kits to larger home upgrades.

Al Spector: Which programs were taken into account, and did the study include things that customers didn't pay directly out of pocket? Charlie Grist: Yes, but it's different for every utility.

Charlie continued his presentation: Energy Trust provided a lot of great data, and I see the organization as a leader in this work. Overall, we saw that schools participated heavily while offices didn't.

A few key findings are:

- We determined that enough of the right data exists to do this gap analysis.
- There is evidence of successful targeted programs.
- Different purposes require different methods and data.
- There is value in continued monitoring and analysis.
- Multifamily housing is underrepresented in most programs.
- Programs are getting out to rural areas, sometimes more than urban.
- Renters are not being reached as well as homeowners.
- Measures with addresses attached to them are only half of the savings. Measures delivered midstream are a big portion of the savings, and you can't ignore that half of the data.

One of the follow-ons is figuring out how to pursue the gaps. Most of the big providers are trying to meet goals, and they are incentivized to find out who the remaining markets are. We found that they started sharing information on their own, meaning that the council doesn't need to facilitate that work completely. A lot of good comes out of that sharing. We need to find the causes of these gaps in participation. Is it language? Culture? Different reactions to borrowing money? We will need to be clever about finding solutions.

Mark Kendall: You showed disparity in multifamily. Was that weighted by potential or number? Charlie Grist: Every utility is different. It wasn't by potential, but Tacoma did the most along those lines. The utility reports are appended at the end of the report.

Jason Eisdorfer: Is the 1 to 8 percent participation rate per year? Did BPA include the lowincome weatherization numbers while Energy Trust didn't? Charlie Grist: The percentages were cumulative over three years. Energy Trust didn't include low-income weatherization numbers.

Josh Weissert: What's the breakout between new construction and retrofit? Charlie Grist: There was more existing than new, but it will be whatever the program provider did as their customer touch-point.

Jeff Mitchell: Do you plan to rerun to this study every year?

Charlie Grist: We're considering it, but we are headed into the eight power plan. This was a lot of work. We'll work on it from the providers' point of view, but it's a heavy lift.

Mark Kendall: Thank your board for doing this. It's meaningful.

### 3. Review of How Energy Trust is Expanding Participation with a Focus on Diversity, Equity and Inclusion

Hannah Cruz: Debbie Menashe gave you an update about our diversity, equity and inclusion initiative at the November 2017 meeting. The board of directors has since revised its equity policy into a diversity, equity and inclusion policy, and staff have developed a diversity, equity and inclusion operations plan. At the core is understanding where there are the gaps in participation, where we can learn more about customers and what barriers customers face.

Shelly Carlton: Engaging diverse communities is part of our core purpose. To understand gaps in participation, we conducted research to learn what direction to take. The research plan was started in 2016. We studied Energy Trust participation data overlaid with Experian income data. We also conducted a phone survey, which included more questions on demographics. And we conducted focus groups with small business decision makers in different communities. Combined, the reports have a lot of information and findings. With the external Experian data overlay, we found that one income group participated highly where others dropped off.

Holly Braun: Charlie's presentation showed population broken out, not just participants. Does your report show that? Alex Novie: Yes.

Mark Kendall: Does this include renewables? Shelly Carlton: This is only residential energy efficiency.

Shelly continued that the second part of the research plan was a customer insights phone survey. We asked 1,000 people to talk for 15 to 20 minutes on the phone. We used a sample of participants in residential measures and a sample of non-participants. In this study, we learned that high school graduates weren't being served at the same rate as those who have a college degree. Bear in mind that only 30 percent of Oregonians over 25 hold a college degree.

The focus groups were an effort to learn if those in rural communities or communities of color were aware of our services, and if they are interested in our services based on printed materials. These groups included Latino, Asian and Asian Pacific Islander, and African American business decision makers and a group of decision makers in Grants Pass. There was a desire from participants for a community based liaison who looked like them and talked like them, potentially dedicated staff or a partnership with a community-based organization. A second finding was that marketing materials need to be clear, quick and representative of the community. Our example collateral didn't look like the focus group participants or their businesses. This 2016 work informed what we did going forward.

Dan Rubado: The next part of our presentation is on developing participation baselines based on race/ethnicity, income and urban/rural location. Our goal was to determine a baseline for how well we served diverse communities in each sector. We received input from outside organizations that have experience with diverse communities and with conducting this type of analysis. Programs will be using this information to develop activities to target diverse communities starting in 2019. We conducted a geographic analysis based on census tracts. Census tracts are a small, sub-county geographic unit created by the Census Bureau to report demographic data. They are a good proxy for communities and generally contain between 1,000 to 2,500 households. We used tract-level demographic data to develop a set of broad diversity indicators. We computed tract-level site participation rates from our own data that we could overlay on the diversity indicators. Holly Braun: It makes sense that this is a small number of households, but did you develop indicators? Did you measure diversity in specific ways?

Dan Rubado: We used American Community Survey data to develop tract-level indicators of community diversity for race/ethnicity, income and urban/rural location.

Dan continued that paritipcation in midstream measures is not included in this work, because it cannot be tied to sites. However, it is significant, especially for the Residential program, and we need to find ways to measure it in the future.

Each of the diversity indicators were created using a one-to-five scale where five always indicates the priority areas: low income, high racial/ethnic diversity and rural location. We then created a composite diversity index that combines the income and race/ethnicity scores, weighted to include rural areas that may not be quite as diverse as urban areas. These indicators highlight communities that are both low-income and racially/ethnically diverse, or very rural and moderately low-income and racially/ethnically diverse. We then overlaid our five-year tract-level participation rates for each sector over the diversity indicator for residential and the urban-rural indicator for commercial and industrial. However, the results vary depending on what index we look at.

For the residential sector, which includes multifamily buildings, attached and detached single-family homes and manufactured homes, we don't see major differences in participation rates in communities with different composite diversity scores. Participation in the areas ranked as one—the most affluent, least racially diverse areas of the state—is slightly higher than the overall average participation rate of 26 percent, but not significantly. Participation in capital measures requiring participant investment was 18 percent, which is higher than the 12 percent participation in free measures.

For the commercial sector, the most striking difference in participation rates is between large energy-using businesses and small- to medium-sized energy users. Large businesses, defined as using 100,000 kilowatt hours or more per year or the equivalent in therms, had a participation rate of 28 percent compared with only 7 percent for smaller businesses. For both large and small businesses, participation rates were higher for most urban areas than they were in rural areas.

For the industrial sector, the biggest difference is again between participation rates for large energy users and small- and medium-sized energy users. Large industrial businesses, defined as using 1 average megawatt or more per year or the equivalent in therms, had a participation rate of 79 percent compared with only 13 percent for smaller industrial businesses. For large industrial businesses, the participation rate isn't correlated with the urban-rural indicator. For smaller industrial businesses, there appears to be significantly higher participation in the urban areas than the rest of the state.

Alan Meyer: Does this include low-income weatherization? Dan: No, this just includes Energy Trust participation.

Charlie Grist: There's some fuzziness to these numbers. I'm trying to gauge the precision. Dan Rubado: It's the total participation versus total households for all tracts in each of the five indicator bins, so there isn't really any error because the numbers are based on a census. However, we don't know if individual participants are non-white or low income, we just know the general demographics of the area where sites are located. The urban/rural indicator is different because it is a geographic characteristic, so we can classify each individual site based on how rural or urban its location is. That's the nature of a geographic analysis like this. We don't have a one-to-one match between sites and demographics because we don't track participation based on income, race or ethnicity.

Holly Braun: This showed no difference based on diversity.

Dan Rubado: For residential, there is no real difference based on the composite diversity indicator. However, there are more pronounced differences based on the urban/rural and income indicators. Participation gaps are in the most rural areas and lowest income areas. Also, there is much higher participation among larger businesses and those closer to urban areas.

Karla Hendrickson: How did you define large customers?

Dan Rubado: Commercial customers using 100,000 kWh or more per year or the equivalent in therms. Industrial customers using 1 aMW or more per year or the equivalent in therms were considered large.

Dan: There seems to be relatively even participation among large industrial customers across the state, but among smaller industrial, it was stronger in urban areas.

Alex Novie: The final part of our presentation is a summary of existing and proposed program activities aimed at expanding customer participation. Energy Trust has been pursuing many of these efforts since the diversity, equity and inclusion initiative was launched in 2015. Ongoing and new activities are outlined in our draft 2019 budget action plans. New Buildings is working with women- and minority-owned businesses as design allies in both customer trainings and fellowships, for example. As we rolled these initiatives out, we didn't have baseline data and we didn't want to wait for data. Now that we have initial results from the 2018 diversity, equity and inclusion data and baselining efforts, we are examining how these parallel paths align and how the data helps inform strategies for increasing customer participation. We have made strides with our diversity, equity and inclusion initiatives in the past, but it is crucial that we measure progress, adjust strategies as necessary and report out to stakeholders.

Engaging community-based organizations is a crucial component of our diversity, equity and inclusion goals to expand customer participation. This includes establishing baseline data, discussing tactics and partnering to deliver services to customer groups. We also have an emerging leadership opportunity to encourage design allies to recruit diverse candidates for internships. From the work Dan mentioned, we are developing a more consistent and transparent approach to developing market assessments and engaging partners. Furthering the small- and medium-sized businesses initiative is integral to expanding customer participation for commercial and industrial programs. This requires continued outreach to increase customer and stakeholder awareness and engagement.

Kari Greer: From the Pacific Power point of view, many of the areas you highlighted are in our territory. It's critical that you work with us because we are also doing a lot of outreach efforts. We can double up our efforts, but we don't want to work at crossed paths with each other.

Wendy Gerlitz: I want to reinforce the importance of working with the community action agencies. Low-income participation is a red flag for me. If you do one measure for low-income customers, it can hurt their eligibility for free low-income weatherization services. It's very important to avoid getting sideways with these efforts.

Peter West: We do have a protocol for that. It's part of the engagement with community-based organizations. Directing some things through them should help.

Lisa McGarity: I didn't see anything about the relationships between energy use and energy burden. Did you look at that?

Alex Novie: We looked at energy use, but energy burden is more challenging to do without individual customer-level information on income. It's a next step for us to address in our market assessments.

Shelly Carlton: There are national studies we can look at also.

Dan Rubado: It's also incorporated into our income indicator data, but not exactly called out.

Hannah Cruz: A question for Conservation Advisory Council members is how often would you like updates on this and what's important to know about?

Holly Braun: I'm impressed with the granularity. I look forward to digesting this further, but I'm impressed with what you've done so far. Now what do we do?

Peter West: There will be chances to talk to program managers about the specifics at the individual tables later in the meeting.

Charlie Grist: I mentioned this in my slides, but wanted to reiterate the tension between efficacy and equity. Early adopters aren't evenly distributed across these groups. There are stages in this work. You may need to look at individual measures, and consider where they haven't been adopted and why. Think of it as a long-term project.

Peter West: This isn't zero sum. Early adopters are very important to us. We couldn't move forward without their early willingness to try things out. Why can't the new technologies be in a low-income setting? Who can we partner with to get it into the field? Ideas like that come out of this work. You can find early adopters, now you need to find the partners.

#### 4. Mid-year 2018 Progress

Peter West provided an update on forecasted year-end achievements to goal by utility. We are expecting another excellent year. We are expect to achieve 98 percent of goal in Portland General Electric terriroty, largely due to fewer savings than expected this year from an industrial megaproject. We expect to achieve about 95 percent of goal in Cascade Natural Gas territory due to a handful of business projects delaying into 2019. New construction is still high, but there it is slowing down in rural areas. Metro areas are outbidding other projects to get things done, leading to a lack of workforce in other areas. Multifamily is very strong across the board, and lighting is also very strong. High bay lighting in industrial settings is driving very strong uptake. Commercial projects are much smaller than before, but there are more of them. Expenses are at 99 percent of budget, so we're getting more savings at lower-than-budgeted costs.

Peter West: OPUC staff and commissioners supported our approach to how we treat the federal lighting standard in our cost-effectiveness calculations for next year. If we pull out of lighting, we would be the only efficiency provider in the region to do so and it would undercut many other programs and utilities. We exclude the federal lighting standard in our calculations, but others include it. All of the analytical approaches point to a need to stick with lighting. We'll continue our plan for lighting, but lighting savings in 2019 will be much less than a year ago. We'll revisit our plan again in 2019 to plan for 2020. We will likely be in the specialty market, which isn't impacted by these standards.

Hannah Cruz: The OPUC asked for lighting trends in our quarter two report, which we included and I recommend Conservation Advisory Council members read.

Charlie Grist: On the lighting decision, I want to follow up on the logic behind it. Internally, did you get a decision memo? How do you make the decision?

Peter West: The decision is documented in an appendix to the quarterly report, and we also presented it to the OPUC during a public meeting. They supported our logic.

#### 5. Draft 2019 Program Action Plans

Hannah Cruz: The draft 2019 budget will be public on October 10. We hope you'll attend the board budget workshop on October 17. Today, you'll receive a sector overview of the draft action plans, followed by time with staff to ask specific questions at individual tables. The objective today is to provide you with the information you need to participate in the budget workshop.

Thad Roth: One year ago, the residential sector transitioned to a single Residential program that includes three tracks: home retrofits, products and EPS new construction. This was in response to forecasted declines in savings. We are in the first year of the transition, and it is going well. We believe we are well-positioned going forward.

In the residential sector, we recognize that we must drive savings through trade allies, retailers, community-based organizations and utilities. We are testing more midstream efforts, and we need to maintain strong relationships with trade allies and customers.

Lighting savings have declined in excess of 70 percent, and we expect declines to continue. We expect to be largely out of the lighting market by 2020, driven by federal standards or market transformation. Low-flow water device savings will also continue to decline. Together, this will require the sector to change the contents of Energy Saver Kitss in 2019. Air conditioning has become a larger opportunity, so we are now looking at a pilot in the coming year. We will also explore a residential pay for performance pilot.

Lisa McGarity: As the last meeting, there was concern about the uptake for commercial pay for performance. How will residential be any different?

Thad: That's why we're going to do a pilot. We tried to learn from efforts elsewhere.

Thad continued that the residential sector will learn more about our target audiences by using data. This will allow us to follow up multiple times with customers who are likely to be interested and develop an approach based on customer characteristics.

We will continue to drive savings through water heating, space heating (including smart thermostats), and new construction as retail lighting and showerhead savings decline. As we move toward midstream delivery mechanisms, we will continue to focus on marketing to customers as they make product decisions and on trade allies through training and sales support for these key measures.

To drive diversity, equity and inclusion activities, we're looking for feedback from community-based organizations on how to approach the customers they serve. We'll contract with them, or through program management contractors, to reach diverse customers.

We worked on manufactured housing and believe there is more work to be done on the heating systems. Manufactured home replacement is another effort. We will also supporting affordable housing. We're working in Woodburn to reach the Spanish-speaking population in that area.

Holly Braun: I'm curious about low-income efforts and whether measures aren't cost effective if we're all trying to buy them.

Thad: We have to be careful what's offered through our programs in addition to or separately from low-income offers. We want to be sure that qualifying customers have access to no-cost offers. At the same time, we are discussing dual funding options with the OPUC to maximize funding and savings for these customers. There are community-based organizations that use funds that have restrictions, and we want to be sure we don't put them at risk.

Lisa McGarity: When will the Spanish microsite be launched? Mana Haeri: It should be later this year or early next year.

Oliver Kesting: In the commercial sector, we have several programs: New Buildings, Multifamily and Existing Buildings. Existing Buildings also includes Strategic Energy Management (SEM) and Pay for Performance. We're seeing a continuing trend toward more, smaller projects. We need more projects to obtain the same level of savings as in the past. There are fewer savings due to baseline changes. Outreach is becoming more costly to reach more small customers. We are seeing less lighting savings. We are working to reach small and rural customers, which requires outreach and cultivating local trade allies.

Most of the sector will remain the same in 2019. However, we're seeing more challenges with Existing Multifamily due to changes in direct installation of energy-saving lighting and showerheads. We will consider a different program design for 2020.

SEM delivery cost is a challenge, so we need to refine it with better targeting and better vetting for services. Pay for Performance has seen very limited customer interest, and we are considering options.

Kari Greer: At what point do you consider closing Pay for Performance? Oliver Kesting: We believe we have a good design and the work has been done to make it available to customers. We can keep the offer open for another year and consider closing it if interest levels don't change.

Wendy Gerlitz: Seattle has an offer they expanded and they received a ton of interest. I'm puzzled by this. We hope to find out more and submit comments through your budget process. Oliver Kesting: We are working with PropertyFit in Multnomah County, as well. This is the commercial Property Assessed Clean Energy program through Prosper Portland and Multnomah County.

Amanda Potter: In the Industrial sector, we have one program with a custom track, which includes SEM, and a standard track, which includes lighting and prescriptive incentives.

We continue to see strong savings potential in the industrial sector. We are planning on evolving our program next year to meet the changing needs in the market. We still see good savings opportunities at large customer sites, but we are also looking for ways to streamline program processes for small- to medium-sized customers in custom and SEM offerings. We're seeing more small- to medium-sized customers participate in the program, and we think they will be an increasingly important part of our savings.

The custom offering is moving to a new structure. We've included SEM and technical studies in our three Program Delivery Contractor contracts. We have a new PDC in territory one. We've developed a streamlined technical study process to test this year and ramp up next year. We will also add cohorts to our continuous SEM offering and develop a more streamlined SEM offering.

We see strong lighting savings in 2018 and expect this to continue into 2019. We're looking at how to evolve the lighting offering so that we can continue to capture cost-effective savings as savings per measure decreases. We are looking at reducing incentive levels, moving measures midstream and revising the Performance Plus offering. We will launch new prescriptive measures to sustain standard track savings.

#### 6. Break-out Session: Questions and Answers with Program Staff on Draft Action Plans

Conservation Advisory Council members, Energy Trust staff and the public in attendance broke into small groups for question and answer sessions on draft 2019 program action plans. There were five program stations (Residential, Existing Multifamily, Existing Buildings, New Buildings and Production Efficiency) available for members and the public to visit in preparation for the October 17 budget workshop with the board of directors.

#### 7. Public Comment

There was no additional public comment.

#### 8. Meeting Adjournment

The meeting adjourned at 4:45 p.m. The next Conservation Advisory Council meeting will be held on Friday, October 12, 2018.

**Special note:** There will be a board of directors budget workshop in the afternoon on Wednesday, October 17 that Conservation Advisory Council members are encouraged to attend. The workshop was added this year to replace a series of budget-related presentations and ensure that Conservation Advisory Council, Renewable Energy Advisory Council and the board are receiving and commenting on the same information through the budget development process. More information on the workshop is forthcoming as we plan the agenda for that day. Please consider holding that time on your calendar as you would a Conservation Advisory Council meeting.
# Tab 11



### **Renewable Energy Advisory Council Meeting Notes**

Wednesday, August 1, 2018

### Attending from the council

Bruce Barney, Portland General Electric Kendra Hubbard, Oregon Solar Energy Industries Association Alexia Kelly, Electric Capital Management Suzanne Leta, SunPower Patty Satkiewicz, Pacific Power James Valdez, Spark Northwest

### Attending from Energy Trust

Mike Bailey Shelly Carlton Sarah Castor Amber Cole Michael Colgrove Chris Crockett Hannah Cruz Phil Degens Andy Eiden Emily Findley Matt Getchell Fred Gordon

### JP Batmale, Oregon Public Utility Commission Adam Schultz, Oregon Department of Energy Anna Kim, Oregon Public Utility Commission Dick Wanderscheid, Bonneville Environmental Foundation

Jackie Goss Jeni Hall Betsy Kauffman Dave McClelland Spencer Moersfelder Dave Moldal Lizzie Rubado Zach Sippel Cameron Starr Mariah Willis Lily Xu

### Others attending

Josh Keeling, Portland General Electric Alan Meyer, Energy Trust Board of Directors

### **Executive Summary:**

- 1. Welcome, introductions, announcements:
  - Staff introduced several new Renewable Energy Advisory Council members
  - Update on RAC field trip scheduled for Tuesday, September 4
- 2. PGE distributed resources update:
  - Josh Keeling of PGE presented current utility developments and planning for distributed resources. Josh helps manage new product development in PGE's Customer Energy Solutions group. He has worked in various roles at PGE including smart grid strategies, electric vehicles, internet of things and storage.

### 1. Welcome, introductions, announcements

Jed Jorgensen called the meeting to order at 10:33 a.m. The agenda, notes and presentation materials area available on Energy Trust's website at: <u>https://www.energytrust.org/about/public-meetings/renewable-energy-advisory-council-meetings/.</u>

Jed discussed logistics for a field trip for Renewable Energy Advisory Council members on September 4 in Hood River. He also provided an update on the Secretary of State performance audit of the OPUC's oversight of Energy Trust, which concluded with a report made public at the end of June and now posted on Energy Trust's website.

JP Batmale: It's a compliment to Energy Trust, how they've been working transparently for 15 years. The Secretary of State was very fair and Energy trust complied with their requests in a timely fashion.

### 2. Portland General Electric distributed resources update

Josh Keeling of PGE presented current utility developments and planning for distributed resources. Josh helps manage new product development in PGE's Customer Energy Solutions group.

Josh Keeling described the unique position of PGE. Energy Trust does the bedrock of work on energy efficiency while PGE's focus is distributed flexibility and capacity resources and transportation. Flexibility will be a bigger focus in near term.

He went on to describe a deep de-carbonization study (available on PGE's website), which is an energy economy-wide study to look at possible scenarios to meet 80 percent reduction by 2050. Gigawatts of energy will be needed to meet demand. The study looked at a few scenarios including high electrification, decarbonized electric fuel and high distributed energy resources. This was not a planning study, but a scenario analysis looking at bulk power systems.

James Valdez: Is it economy-wide, looking at transportation and building heating use as well? Josh Keeling: It does not include landfill emissions or agricultural. It does rely somewhat on the feed stock.

Josh Keeling said the study was done by Evolved Energy Research, who also did a study in Washington State. What motivated it was the capacity constraints and how we meet those under current conditions, and city and county resolutions on how to achieve targets that look economy-wide. PGE wants to integrate this analytically into its IRP process, not just on the policy side.

Josh Keeling moved on to discuss balancing solutions, stating there is a need for flexibility in the system, and flexible loads and energy storage play a large role. It was noted that hydropower systems have potential to function as a battery. None of the resources are able to be dispatched short of the electric fuel scenario.

Josh Keeling continued, explaining the scenario is modeled so you don't take any abilities away from the customer. They don't have to forego electric vehicle charging or hot water, and they are just shifting available capacity, giving room to move energy a lot more often. What's doing the most is electric water heating and electric vehicle charging, with commercial HVAC in a distant third. You see a lot less with thermostats because their thermal storage is less.

Josh Keeling described PGE's distributed energy resource portfolio and a list of cross-cutting initiatives that were approved or near-approved.

Suzanne Leta: What do you define as flexible load? Would solar plus storage be considered a flexible load?

Josh Keeling: I think it is, because it's net load. The power council's definition would qualify it that way because it's behind the meter and affecting customers' net load. From a utility perspective, load is at the meter. If you took battery storage on other side of the meter, probably not. A smart inverter would also qualify in that way. From a business model, that's how it would be expressed.

Lizzie Rubado: Can you clarify the opposite position, which is the perspective that solar and storage is not considered to be a flexible load?

Josh Keeling: Some see it as a generation resource. Is a battery system more like a bulk power system or more like a load? What's a meaningful way to describe and operate the system? Looking at the technology or the business model?

Josh Keeling continued that with energy storage, the line between operations and planning is blurry. This is also where things differ from traditional demand-side management and renewable energy because the flexible assets have to be operated. Rather than providing value passively, you have to create and maintain customer relationships, similar to strategic energy management programs.

Josh Keeling described the farther-out initiatives such as Virtual Power Plant, stating that conversations about these topics are getting more traction compared with past years.

Suzanne Leta: Is this distributed energy resource potential study a complement to what was already done with the deep decarbonization study?

Josh Keeling: The deep decarbonization study focused on the 2050 horizon and meeting carbon reduction requirements. On the other side, this is looking at every distributed energy resource to see what is feasible and how they interact with each other in various scenarios. In the past, we studied these resources independently of each other, but now we're looking at possible interconnections. For example, default time-of-use rates might affect how people dispatch batteries.

Suzanne: When will that happen?

Josh: It will come out in public workshop at end of this month with preliminary results, looking at both existing and potential assets.

Josh Keeling moved on to the renewables portfolio slide.

Cameron Starr: How does the thermostat direct installation program work? Josh Keeling: The direct installation program will kick off in September in collaboration with Energy Trust. Energy Trust is exploring other options for efficiency purposes. The initial pilot focused on customers with heat pumps and electric furnace systems, which is also an underserved market. We front load the incentive combining energy efficiency and demand response savings, at no cost to the customer.

Kendra Hubbard: What is the residential pricing program? Josh Keeling: We did a pilot on residential pricing testing 12 different treatments using control trials.

Josh Keeling said the evaluation was done by Cadmus and is available. California has done time-of-use studies, but most are summer focused whereas we have all seasons. This is the first example of having that much data on dual season flexibility. Winter is very hard, and there are major differences in how people respond. We also had an all-time summer peak and a snowstorm. We learned how models break down when it snows in Portland. We came away

with a lot of scientific data, and you can tease out the impact of demand response on customer satisfaction in very specific ways.

Suzanne Leta: Is your plan to propose voluntary rate design options? Josh Keeling: No, it will be opt-out programs. We will propose a testbed program of 20,000 customers enrolled in an opt-out peak-time rebate program. We know it's cost-effective and does not hurt satisfaction. We're more interested in the interactions that need to still be hashed out. Do you do it with rate design, programs or a combination? This will happen in April 2019 targeted at certain substations.

Josh Keeling continued with near-term efforts regarding a new construction program involving solar-ready, storage-ready, grid-interactive end uses for new homes, with new buildings to come later.

### Anna Kim: What is the time frame for response?

Josh Keeling: For aggregate flexible load resources? We have resources in our stack that can respond to signal, and our demand response management system and can integrate into the energy imbalance market technically. Now it's more likely to offset thermal resources. You can play with portfolio in more or less risky ways. That's how we use demand response now. Our resources vary in responsiveness to 10 minutes to 4-18 hours. Customers get differential rates. Most customers get 4 hours.

Anna Kim: How much lead time?

Josh Keeling: Four hours. For water heaters, one to four seconds. For thermostats, four hours. A couple are day-ahead. Pricing is day-ahead. We're exploring the possibility of going four hours. We have a multifamily water heater program where we retrofit whole facilities and work with entire properties. They have switches. We do demand resource that's always on with individualized customer baseline forecast that customizes curtailment to ensure they never run out. You get less load, but you get it all the time. There are no restrictions with how you dispatch it if you maintain a level of service. It increases property value and alerts on maintenance issues. Most programs have familiar technology and then get customers on board, but with this we don't know as much. The technology is very complicated and we set up local area networks. Customer satisfaction is high, and there is a lot of potential for energy imbalance market use cases. There are not Wi-Fi reliability issues because multifamily is so condensed. We're catching new construction opportunities.

Josh Keeling continued with energy storage initiatives.

Kendra Hubbard: For batteries, is there a reason that you collect data or do demand response? How are they chosen?

Josh Keeling: There are many areas of learning. There's a difference between the purpose of the pilot and the value of the resource. The pilot is about demonstrating how we use and operationalize resources, the customer response to the business model, how trade allies respond, interaction with Energy Trust and finding out what demographics are using the programs. Value-wise, it's about capacity and value stacking. We want to make sure we're building a foundation for 10 years from now when we need all-the-time flexibility.

Alan Meyer: Our charter is energy conservation, not efficiency. Your focus is capacity. When the legislation was written, that wasn't a concern. We have parallel paths, but would it be useful to converge so we can look at capacity more? Some capacity resources use more energy but there is a benefit to the system. Is there benefit in looking at that?

Josh Keeling: You can look at capacity now. It's a component of evaluations from the cost standpoint. There's a difference between capacity and flexibility. It makes sense for a utility to deploy operational assets. I don't think we always have to be the same type of organization to work well together, like how you work with Northwest Energy Efficiency Alliance.

Josh Keeling introduced the idea that distributed flexibility is the new generation, with virtual power plant and pervasive distribution value.

Fred Gordon: Regarding the word pervasive, do you see distributed value as something that will occur by exception, or will it significantly vary on most points of delivery? Josh Keeling: The best distributed value is what we're doing on Fire Station One solar and storage project by minimizing backflow on the network. It's not what we think about as deferral, but it's a serious restriction on system. Don't think about deploying in reaction to an issue; make sure you're ready for the unknown and you're switching it on. For example, with the solar inverter, we should have anticipated the need for better controls, as opposed to retrofitting a smart inverter. There was a lot of pushback from finance folks to do it another way, but that's unwise.

James Valdez: How are you looking to address equity issues in deployment, making sure the opportunity to participate isn't locked in to homeowners and people with access? Josh Keeling: Flexible load programs don't have high capital outlay. You don't have to do anything to access those, which is a big reason for doing direct installation programs. If we wanted to provide the most thermostats, direct shipping is a better way. We didn't pursue that first because we wanted to adjust to the reality of benefit to more affluent home owners. We don't want programs solely populated by these people. Direct installation is appealing because the target we were missing are people with electric heat who tend to be low income. We can address capital outlay for them. You can put smart thermostats in rental properties. It's easy to do. That's a reason we're focusing there. There are better opportunities in how we structure incentives for energy storage and flexible loads to address high capital costs. Everyone doing demand response programs does monthly payments as an ongoing incentive. Could you structure that to frontload incentives with some type of agreement? Implicitly that's what we're doing with direct installation, but there are other opportunities. It's not on the bill; you can split incentives between property owners and tenants. You have that liberty, and that's good for dealing with split incentive issues more directly.

### 3. Public comment

There was no public comment.

### 4. Adjourn

The meeting adjourned at 11:58 a.m. so that members could take part in a joint Renewable Energy Advisory Council and Conservation Advisory Council session on Energy Trust's strategic plan. The next scheduled meeting of the Renewable Energy Advisory Council will be Friday, September 14, 2018.

## Renewable Energy Advisory Council and Conservation Advisory Council Joint Session: 2020-2024 Strategic Plan Development

Prior to the meeting, members of the Conservation Advisory Council and Renewable Energy Advisory Council met with staff working on development of the 2020-2024 Strategic Plan. The joint meeting included an interactive discussion on Energy Trust's unique strengths and value to the marketplace. Facilitator Holly Valkama opened the session and John Volkman introduced the process for developing Energy Trust's 2020-2024 Strategic Plan. Compared with past plans, which have focused largely on quantitative energy goals, the strategic plan in development will consider qualitative goals as well. The planning process will incorporate a staged approach to develop various components of the plan.

Renewable Energy Advisory Council and Conservation Advisory Council members contributed to the first stage of the strategic planning process by participating in an exercise to revise a draft "strengths and capabilities map" about Energy Trust. John reviewed a preliminary map of strengths with the group, which included scale, credibility, design and execution, and innovation. The members gathered in small groups to discuss the map and report feedback and recommended changes.

Some groups proposed additional strengths such as money management, nonprofit status, transparency, customer satisfaction and Energy Trust's key position in an ecosystem of other clean energy-focused organizations. Other groups wanted to qualify strengths or discuss how they might evolve over the course of the strategic plan. For example, a few groups called out innovation and credibility as characteristics that should be considered in context and may take on new meaning over time.

A revised map incorporating the members input will be provided to the councils before the October Conservation Advisory Council and Renewable Energy Advisory Council meetings.

# PINK PAPER



### **Renewable Energy Advisory Council Meeting Notes**

Friday, September 14, 2018

### Attending from the council

Bruce Barney, Portland General Electric Kendra Hubbard, Oregon Solar Energy Industries Association Jaimes Valdez, Spark Northwest Adam Schultz, Oregon Department of Energy Anna Kim, Oregon Public Utility Commission Les Perkins, Farmers Irrigation District

### Attending from Energy Trust

Lily Xu Michael Colgrove Chris Crockett Phil Degens Emily Findley Matt Getchell Shelly Carlton Jeni Hall Betsy Kauffman Julianne Thacher Dave McClelland Spencer Moersfelder Dave Moldal

### Others attending

Alan Meyer, Energy Trust Board of Directors Ernesto Fonseca, Energy Trust Board of Directors Mark Kendall, Energy Trust Board of Directors Jeff Stollerd, Water Environmental Services of Clackamas County Erik Andersen, Pacific Power Michael O'Brien, Renewable Northwest Andria Jacob, City of Portland Frank Vignola, University of Oregon April Snell, Oregon Water Resources Congress (phone) Oriana Magnera, NW Energy Coalition

Lizzie Rubado Zach Sippel Mariah Willis Lily Xu Jed Jorgensen Debbie Menashe Josh Reed Hannah Cruz Rachel Wilson Joe Hernandez Robert Wylie Amber Cole

Brett Reidstadt, Water Environmental Services of Clackamas County Miranda Bonifield, Cascade Policy Institute Charlie Coggeshall, CCSA Shelley Beaulieu, TRC Solutions Kate Hawley, TRC Solutions Rebecca Smith, Oregon Department of Energy (phone) Jon Miller, Oregon Solar Energy Industry Association

### **Executive Summary:**

- 1. Draft 2019-2020 Action Plans:
  - Staff presented the draft action plans and concepts that will form the foundation of the 2019-20 budget for the renewable energy sector
- 2. Water Environmental Services of Clackamas County Biopower Project Decision
  - Staff presented on a proposed cogeneration biogas project at the Water Environmental Services of Clackamas County water resource recovery facility in

Oregon City (0.49 aMW, \$1.8 million proposed incentive). Renewable Energy Advisory Council members supported the project, which will be presented to the board for approval of the incentive at its October 17 meeting.

- 3. Renewable Energy Certificate (REC) Policy Review
  - Energy Trust's REC policy is up for review. Staff held a workshop to enable Renewable Energy Advisory Council members to discuss a set of considerations and provide feedback. Most members felt the policy should be changed significantly. A minority of members believe the policy should continue as is. Renewable Energy Advisory Council comments will be incorporated into a memo to the board policy committee.

### 1. Welcome, introductions, announcements

Jed Jorgensen called the meeting to order at 9:01 a.m. The agenda, notes and presentation materials are available on Energy Trust's website at: <u>https://www.energytrust.org/about/public-meetings/renewable-energy-advisory-council-meetings/</u>.

Jed Jorgensen introduced a few new Renewable Energy Advisory Council members: April Snell of Oregon Water Resources Congress, Anna Kim of the Oregon Public Utility Commission, Oriana Magnera of NW Energy Coalition and Andria Jacob from the City of Portland.

Dave McClelland announced staffing changes on the solar team. Jed Jorgensen reviewed the agenda and recapped a recent field trip to a Hood River irrigation district attended by Renewable Energy Advisory Council members.

### 2. Draft 2019-2020 Action Plans

Staff presented the draft action plans and concepts that will form the foundation of the Energy Trust's 2019-20 budget for the renewable energy sector.

Jed reviewed the budget timeline and process. He provided a reminder about the upcoming board budget workshop and how it departs from the process followed in previous years. Jed reviewed the budget schedule, emphasizing the role of Renewable Energy Advisory Council members in advising the board of directors on the budget. Jed then presented the Other Renewables draft program action plan. A new activity the team will take on is exploring nonenergy benefits and grid benefits of projects supported through this program.

Michael O'Brien: By non-energy and grid benefits, do you mean not just generating onsite to reduce peak load but also shifting peak to other times of day?

Jed Jorgensen: Yes, the goal is to figure out the broad menu of capabilities. It might be easier to find out what they can't do, so we're open.

Michael O'Brien: How would you assign value to peak management?

Jed Jorgensen: Great question. That's what we're trying to find out—if they have benefits and how to value them. Where does the value go? To utilities, Energy Trust or the local

community? What is Energy Trust's role in promoting the value?

Michael O'Brien: Is solar thinking about the same issues?

Dave McClelland: The Solar program has similar things going on. In some ways we might be further along.

Jed Jorgensen: Dave's work in the Solar program can inform my work in the Other Renewables program.

Les Perkins: Are you going to explore microgrids and islanding, or is that further along? Jed Jorgensen: I don't know. We have to think that through

Betsy Kauffman: We are looking to see what is possible, then what roles we can play. At this point, we need to broaden our thinking about what projects can do besides generating energy. What flexibility can they provide? Josh Keeling of PGE emphasized the options for flexibility. Alan Meyer: In other parts of the country that are more capacity constrained, utilities see value in flexibility and will pay for it.

Jed discussed additional considerations and diversity, equity and inclusion planning.

Jaimes Valdez: Regarding the diversity initiative, are contracting labor requirements part of what is looked at on a project?

Jed Jorgensen: Not currently, but that's something we've been talking about. Is that the right layer to add in?

Ernesto Fonseca: How are the funds for the Other Renewables program being used? Jed Jorgensen: There are two pathways. One is project development assistance, such as a feasibility study where we look at the scope of work. At that point we don't look at the labor practices; we just look at the work. When they finish it, we reimburse for 50 percent of the cost. Installation incentives work similarly. We bring larger projects to the Renewable Energy Advisory Council and the board, or we approve smaller projects internally. There may be one payment or a series of payments.

Dave McClelland presented an overview of the Solar program and 2019 draft action plan. He reviewed new activities, such as plans for increased collaboration with utilities.

Michael O'Brien: What does collaboration with utilities on storage docket mean? Is it engaging the OPUC proceedings or a request for proposals?

Dave McClelland: It's the programs that come out of the dockets, so that's probably not the right language. At the August Renewable Energy Advisory Council, Josh Keeling presented many things being done in distributed energy resource, so this would be collaboration with Josh's team as they roll out their storage program. We see overlap in the customers who will be interested in residential storage or a microgrid with solar customers. Ideally, customers would get both storage and solar.

Oriana Magnera: Are there considerations around equity, considering many of these projects are being deployed in areas with limited access?

Dave McClelland: There is opportunity for that, but no specific program has been developed yet. Your input would be great. It's a major consideration. In our resiliency work with the City of Portland and Multhomah County on the Renewable Resilient Power for Portland group, equity has been major filter we've put on in how we site projects.

Dave discussed the idea of collaborating with efficiency programs in advancing solar ready construction.

Andria Jacob: Did Governor Brown's executive order last year addressing solar ready do anything to move the needle? I'm not sure what the impact was on the existing status. Dave McClelland: It didn't go as far as our current solar ready standard and incentives, but it is helping push conversation in terms of builders being more interested. There is an opportunity in the south Hillsboro development that is one of the PGE testbeds for demand response work. We're looking to partner with Josh Keeling's program on how to get new homes there to incorporate high-efficiency and storage.

Andria Jacob: There is another testbed in Portland that will test different things.

Dave McClelland: For PGE there are three testbeds: south Hillsboro, north Portland and Milwaukie. PGE is working on taking the work from demand response pilots and scaling it up in a location. Does it have substantial impact on load?

Anna Kim: In the testbeds, are you talking to them about adding solar? Is there something specific?

Dave McClelland: Nothing at this point except collaborating with Josh to present our wide variety of options. We would like to have a clear and coherent set of options for them that include renewable energy.

Anna Kim: Since you're already there, are you going to take the opportunity to talk about solar and other options?

Dave McClelland: We have outreach to customers as well, and trade allies who are out there selling, and they will have information about the utilities' opportunities as well as ours. Josh has envisioned that these testbeds are an area where we'll deploy storage systems, in south Hillsboro in particular. How can we avoid confusing customers by providing conflicting messages, but instead come to them with a clear and consistent set of options?

Jaimes Valdez: Some of those options are low- or no-cost but others would require investment or financing. Is there a path for that piece as well, for education and how to pay for these things?

Dave McClelland: This is an action plan for next year, and we're very early in collaboration but it needs to be done. How are we not stepping on each other toes and providing consistent messaging, particularly with solar and storage? We've seen a lot of interest for storage and expect to see interest from existing solar customers. The Internal Revenue Service, in a letter ruling, said you can take a tax credit for adding storage to an existing solar system. We need to line up our messaging.

Frank Vignola: Are you working with utilities so they can manage storage with the grid? Dave McClelland: Storage installed through the utilities' programs would need to meet utility needs. There will be some sort of payment through that program for particular needs. Bruce Barney: At a high level, the battery will benefit utilities and the customer will be compensated. Like sharing the battery, it can provide emergency backup, but utilities can also use it for our use cases

Ernesto Fonseca: Peak loads occur during extreme heat or cold. At night, how are you going to manage the quality of energy from the battery?

Bruce Barney: There are different peaks—one might be on a particular feeder different from our system peak. Winter peak occurs at 5 a.m. Peak management mostly consists of what you see in hot or cold days, but we may have peaks on a feeder that don't coincide. We're planning testbed locations based on local constraints. In terms of power quality, these inverters are very good, and we don't anticipate issues. We're looking at this as an aggregated resource.

Ernesto Fonseca: In terms of the battery capacity, are they are going to be available for emergency backup?

Bruce Barney: The utility would always leave reserve capacity. For example, if a battery can store 100 units, we might not go below 30. We always leave some for the customer.

Ernesto Fonseca: Is the long-term goal to integrate capacity into the grid, thereby reducing production?

Bruce Barney: Yes, for meeting our peak demand.

Oriana Magnera: Looking at the focus on new construction in south Hillsboro, it's not likely to reach communities who haven't had access to new technology. How are you going to ensure those technologies are reaching more communities? Future code will put a burden on affordable housing. Are we going to work with multifamily to help them meet code? Dave McClelland: Yes, we share your concerns. We are being pushed in two directions and we're looking for feedback on how to find balance. How can we push forward future technology and make sure solar is a viable part of an efficient, flexible grid? Some of that incorporates expensive leading-edge technology. The other direction is commitment to improving access. Andria Jacob: In talking to Jason Klotz of PGE, he said they're looking at this on a territory-wide basis. Milwaukie has different demographics than Hillsboro. On a portfolio basis, they're reaching a lot across the three testbeds. You do want to test some of them on upper demographic that can help adoption by lowering costs.

Mark Kendall: How does solar ready work relate to overall resource over the long-term at a macro level? In the 1970s, 30 jurisdictions had solar zoning that prohibited a neighbor's hedge from blocking your solar. In Benton county, someone challenged the use of solar zoning code, but they didn't know they had it on the books or enforce it. There's opportunity to look broader and longer.

Dave McClelland: The key thing about solar ready is less about access to a solar window and more about connecting builders and trade allies, getting solar on their minds. It's not hard to take the next step and install. If every builder decided to install, that would be the ideal outcome. I see this more as making solar standard. For new buildings, there is heavy engineering going on and you can easily design a building that can't accommodate solar. That's important to avoid. It's important to get solar into the first design charette.

Mark Kendall: That's good. Education is critical. All jurisdictions that saw solar zoning go away were lobbied out by home builders

Jaimes Valdez: I worked with the City of Portland. Solar access has a different meaning than in the early 1980s, back then it was about vegetation and sun access. Local jurisdictions had a hard time defending against the property rights of local neighbors, and we'll continue to deal with this. This work for solar ready is trying to make basic building orientation with the sun in mind, in line with natural resource. Continued access for a system is still an issue.

Dave discussed plans for a low-moderate-income solar and an upcoming new grant opportunity to provide \$8,000 grants to develop new program concepts for delivery solar to low-income communities.

Kendra Hubbard: What types of organizations are you expecting to apply for direct grants? Dave McClelland: Typically, a community-based organization who will partner with a technology expert to bring in cost information and help find other sources of funding. These will develop into model projects that can be replicated. Then we can allocate additional funding to the model projects

Betsy Kauffman: The idea is to see the field and get different program concepts going, then see what's viable and come back and incorporate findings into standard program new offerings. Kendra Hubbard: For 2019?

Betsy Kauffman: We will release solicitation to apply this fall, then contract by year-end.

Oriana Magnera: Is there any support for leveraging those dollars? \$8,000 might not go far on an ambitious project.

Betsy Kauffman: That \$8,000 amount isn't for the project installation. It's for figuring out a program model. Incentives for the project itself would require a separate application. This is for

a group that needs, for example, to hire a grant writer, do work with accountant or spend additional staff time working on it.

Jaimes Valdez: They are capacity building activities? Dave McClelland: Yes.

Alan Meyer: Where are the dollars coming from? Betsy Kauffman: Our solar budget.

Dave McClelland described diversity, equity and inclusion activities for Solar in 2019.

Jaimes Valdez: For the diversity, equity and inclusion work the low- and moderate-income solar group is doing, is there an opportunity to play a role in other parts of Energy Trust renewable programs?

Dave McClelland: There is interest in broadening the view of that group. Betsy Kauffman: Do you mean the low- and moderate-income solar workgroup? Jaimes Valdez: Yes.

Betsy Kauffman: We view that as a subset of renewable diversity, equity and inclusion work, but with regard to that group, this year is a capacity building effort. We brought in interested solar groups that don't have expertise and tried to widen that. That group is going to help us figure out how we form our diversity advisory council.

Debbie Menashe: That's one of a few different ways we're reaching out to community groups. In November, there is a new low- and moderate-income working group and time dedicated to leverage that work and connections to serve on advisory council. There will also be individual outreach to solicit people to work on the council. By February 2019, we'll have the council in place. The low- and moderate-income working group is a good resource. They know about Energy Trust, have knowledge of solar and are working to create new strategies.

Dave finished reviewing the slide on diversity, equity and inclusion activities, describing diversity in the solar workforce, particularly gender diversity. He then presented on additional considerations such as tax credit impact on project volume and community solar.

Jed asked the group if they had any feedback.

Kendra Hubbard: Going back to the grant process, how will that be messaged to the public? Betsy Kauffman: We've got a big distribution list to community-based organizations and welcome them to forward that to their contacts. For the general public, it will be messaged to trade allies.

Kendra Hubbard: Through Insider?

Betsy Kauffman: Yes. We could also consider a press release.

Jed reviewed next steps on the budget process and invited future feedback from the Renewable Energy Advisory Council group at any point.

3. Water Environmental Services of Clackamas County Biopower Project Decision

Staff presented on a proposed biopower cogeneration project at the Water Environmental Services of Clackamas County water resource recovery facility in Oregon City (0.49 aMW, \$1.8 million proposed incentive).

Dave Moldal introduced the applicant's representatives, Jeff Stallard and Brett Reistad. Dave reviewed the benefits of the project and the evolution of waste water treatment services,

explaining how municipal facilities reduce greenhouse gases. He presented a summary of biopower and combined heat and power technologies at wastewater recovery facilities in Oregon. Energy Trust has provided incentives to 7 of 10 wastewater recovery facilities that have operating cogeneration systems.

Bruce Barney: For the Kellogg Creek plant in Clackamas County, is that biopower project expansion upcoming?

Dave Moldal: Yes, a feasibility assessment is the next step. They have an existing, aging cogeneration set, which needs to be replaced.

Jaimes Valdez: What do you consider high-strength waste?

Dave Moldal: This includes organic material with high volatile solids content—food processing waste; fats, oils and grease; post-commercial food waste; and brewery waste.

Dave continued describing some of the projects, emphasizing the reliability of the technology. He discussed biopower potential at 11 additional wastewater recovery facilities in Oregon with anaerobic digesters, which are smaller and more expensive and likely have higher above-market cost.

Les Perkins: Is the heat produced used primarily used on-site or delivered to other sources? Dave Moldal: Typically, the facility uses all the heat produced by the cogeneration system to heat the digester or for other process heat loads. Digesters are typically heated to 98 to 103 degrees. The City of Salem extended a heat loop from the new cogeneration to an administration building.

Dave showed a promotional video from Clean Water Services describing their new biopower cogeneration project with fats, oils and grease receiving at the Durham wastewater recovery facility.

Mark Kendall: With clean burn technology, does co-digesting fats, oils and grease increase air emissions problems?

Brett Reistad: Most of the compounds that cause air emissions are in wastewater. For example, sulphur dioxide is a byproduct of breakdown of existing sulfur compounds.

Mark Kendall: So you could increase biogas production without increase air emissions problems?

Brett Reistad: Yes. Fats, oils and grease is unlikely to increase air emissions in a lean burn cogeneration system. Fats, oils and grease is a digester's favorite food. It is 100% volatile solids.

Dave Moldal summarized the City of Gresham's cogeneration story and reviewed a graph showing bill savings over time.

Bruce Barney: There is overhead involved in operation. What is the economic impact if you were to overlay that?

Dave Moldal: The operations and management costs are about 3 cents per kwh generated. Bruce Barney: So, about half of the pure electricity is used up with overhead? Dave Moldal: Yes, you see the effect of increased generation and revenue from tipping fees.

Dave Moldal reviewed an annual savings slide showing the project reduced overall load through energy efficiency, buying clean wind and adding solar. Through cogeneration and solar, they achieved net-zero in 2015.

Dave mentioned that the Metro Council voted in July 2018 in favor of an ordinance requiring food scrap separation and recovery, which starts in 2020. Co-digestion of food waste and other organic material at wastewater recovery facilities can make biopower possible at many smaller wastewater recovery facilities. Dave also mentioned future pathways for optimization of renewable energy at wastewater recovery facilities.

Bruce Barney: Would the biogas be stored to work as a battery?

Dave Moldal: Wastewater recovery facility load goes up and down through the day. As they're continuing to produce biogas, there may be more than the plant needs at certain times. They may be able to use batteries to offset energy use at certain times of the day?

Jaimes Valdez: In event of a Cascadia earthquake, could a wastewater recovery facility use cogeneration island from the rest of the grid?

Dave Moldal: Potentially yes, but from a regulatory standpoint, it is typically not permitted. Bruce Barney: If the grid goes down, they have to separate from the grid.

Dave Moldal: I don't think any of these plants have the ability to do that today.

Les Perkins: Have you explored potential in rural areas? In Hood River County, we have an issue with solids from portable toilets used in agricultural areas, with nowhere to take it. That's where I think there's value. There's nowhere to take waste if the city stops taking it. It's the same in most rural counties with agriculture.

Bruce Barney: Is most of the waste from the septic tank already digested? Les Perkins: They're dumping it into the Hood River wastewater collection system. It's a capacity issue in the region. Every orchard has portable toilets, and as food security issues increase that issue becomes even bigger.

Dave Moldal continued with the Water Environmental Services of Clackamas County project. Tri-City water pollution control plant is a 12-million-gallon per day plant that provides wastewater services to the Cities of Gladstone, West Linn and Oregon City. He described the proposal to demolish the existing cogeneration system and install a new generation system. No new buildings need to be built. By 2029, there is estimated to be enough biogas to run the cogeneration set at full out, then it will produce excess biogas. An external review by Kennedy Jenks found that the incentive application is complete, the project is low-risk, and the analysis used conservative assumptions. Renewables staff is proposing an incentive of \$1.8 million to be paid in two installments.

Bruce Barney: Would the incentive allocate 100 percent of the Renewable Energy Certificates (RECs) to PGE?

Dave Moldal: Yes

Alan Meyer: How did we calculate the \$1.8 million?

Dave Moldal: The suggested incentive assumes a \$2.1-million Renewable Development Fund incentive from PGE.

Dave continued going over the project timeline, and Jeff Stollard stated that the Tri-City wastewater recovery facility started construction of a new digester.

Alan Meyer: Will current cogeneration be able to run until the new one is operational? Dave Moldal: Yes, they made some critical repairs, and its operating today but at low efficiency. Fiber optics are already at the location, because Tri-City participates in PGE's distributed standby generation program.

Bruce Barney: If the existing connection to PGE system wasn't there, I would estimate that an additional \$100,000 interconnection cost would be required, so there's a benefit in already having that connection.

Mark Kendall: What role does siloxane removal have in the longevity of cogeneration equipment?

Brett Reistad: Digester biogas contains siloxanes. It is a silicon-based compound that originates from health care products such as lotions and deodorants. If the siloxane is not removed from the biogas, it ends up on the inside of the cogeneration set, which causes operations and maintenance problems. That's the primary reason for the gas treatment system—to remove contaminants in the biogas.

Mark Kendall: Are those chemicals part of why the existing system is so ragged? Brett Reistad: Yes, the existing treatment system is using biogas with contaminants and combusting it. The operators deal with the repairs.

Dave Moldal: The existing engine is at the end of its useful commercial life and has had lots of repairs.

Brett Reistad: The existing engine is running at 30 percent fuel efficiency, and the new one will operate at 41 percent efficiency for converting input fuel energy to electricity.

Jeff Stollard: Excess heat from the cogeneration system will be used to heat the administration building and lab.

Mark Kendall: Are there natural gas savings, too?

Michael O'Brien: Is the 8-percent discount rate picked by you?

Dave Moldal: Yes. That's a typical discount rate for municipally owned biopower projects. Jed Jorgensen: We've been looking at most municipal projects at an 8-percent discount rate. Erik Andersen: What's the contingency if the PGE Renewable Development Fund funding doesn't come through?

Jed Jorgensen: We would circle back with Water Environmental Services and consider a different incentive. We'll be taking it to the Energy Trust board, and we like to get sense from Renewable Energy Advisory Council before that whether the group has concerns about the project.

Frank Vignola: In terms of budget, you only have so much to spend each year? Jed Jorgensen: We have the budget. This is a project we foresaw based on project development assistance incentives. We try to be ready with enough budget to support the project. This is part of that money we set aside.

Frank Vignola: What is the percentage of the total budget?

Jed Jorgensen: If we say this incentive is around \$2 million, our total for PGE budget was around \$6 million. The Salem project was \$3 million. So, roughly 30 percent.

Dave Moldal asked the group if they had any concerns about the project. There were no objections to moving forward.

### 4. Renewable Energy Certificate (REC) Policy Review

Energy Trust's REC policy is up for its every-three-year review. In a memo to the Renewable Energy Advisory Council, staff presented a set of considerations for discussion and feedback through an interactive exercise.

Renewable Energy Advisory Council members were seated at four different tables with at least one Energy Trust staff member per table to answer questions.

Jed began by providing some background on Energy Trust's REC policy. Since 2004, Energy Trust has had policy on RECs, which was identified as a need early on by the board of directors. It was noted that there is nothing about RECs in the public purpose charge legislation. The REC policy originated with the understanding that RECs are part of the value of renewable projects

and an asset that can be transferred to ratepayers. Energy Trust requests a percentage of RECs from installed projects related to the percentage of above market cost that Energy Trust's incentive covers. There has been a lot of change with renewable markets and the value of RECs over time.

The value of RECs spiked early on and then steadily declined. We now have more capacity, so supply increase has caused REC values to fall. As values dropped, Energy Trust takes more from a project with the goal of providing value to ratepayers. In 2015, we asked to stop trying to transfer RECs from small scale projects into Western Renewable Energy Generation Information System (WREGIS). We are taking contractual ownership of RECs but not putting net metered projects into WREGIS. One of the biggest changes now is that Oregon's community solar program directly conflicts with Energy Trust's current policy, limiting the new market Energy Trust could have a role in. The policy precludes us providing an incentive because Community Solar projects must give RECs to participants.

Alan Meyer: Why was that a requirement?

Michael O'Brien: For additionality reasons, if the REC is held on behalf of a customer, it helps the utility comply with the Renewable Portfolio Standard and make the usual set of claims. Jaimes Valdez: Also, from marketing perspective, people need to be able to talk about the benefits of participation in community solar.

Alan Meyer: So logically, Energy Trust would be investing in brown energy. Jaimes Valdez: The question is, why in 2004 Energy Trust though it was important as a condition of the incentive.

Bruce Barney: Can you help us understand the magnitude of the dollars and how much RECs are worth?

Jed Jorgensen: RECs are about \$0.25 to \$2.00 each, but there's not much of a market. Bruce Barney: There's an overhead involved in registering with REGIS to get the RECs. Rebecca Smith of ODOE by phone: REC values are more volatile looking forward because of changes in the RPS that affect their shelf life. You can't bank them as long. We removed the solar bonus and are seeing fewer RECS delivered from those projects. The Oregon voluntary market continues to grow, and RECs are becoming more difficult to acquire.

Jon Miller from Oregon Solar Energy Industries Association: This isn't a legal requirement but an internal policy. Is it changeable?

Betsy: Yes, it is an internal policy.

Jed prompted the small groups to begin a 20-minute discussion regarding the REC policy. Each table summarized their discussion:

Betsy Kauffman for group one: Most people, with one exception, feel the current REC policy is not providing much value to customers. Bruce Barney stated that while ratepayers are generally excited about installing renewable energy, they aren't thinking much about RECs. RECs represent value but don't need to represent renewable value. One person felt RECs do represent renewable value and Energy Trust should continue collecting them. With regard to community solar, the group generally feels it would benefit Energy Trust to not have a policy get in the way of providing customer benefit.

Erik Andersen for group two: We had some of the same concerns. With regards to the existing REC policy, there is a value. We seem to be focused on how there is limited value today, but the market is dynamic. California has a 100 percent renewable mandate so there are surplus

RECs, driving down value. As things mature, decisions shouldn't be made based on the status today. Even if we were to disband it, it creates complexity on above market cost calculations. RECs have a marketable value. Factoring that into above market costs in a dynamic market to determine an eligible incentive is not insurmountable, but it is a challenge.

How do we forecast value in the market of a 20-year asset? It increases administration costs and challenges to figure out how to value that. That's one issue of disbanding the REC policy. With regards to community solar, it seems that when a project is envisioned to be small scale, there is an impediment. They are closer to net metering than a 2-MW hydropower facility. Maybe there is some sort of breaking it up and treating differently, using different analyses, or using the more complex methods employed for larger renewables projects.

Lizzie Rubado for group three: This group had a consensus that the policy is not facilitating Energy Trust's work in supporting renewable markets and should be amended broadly for all projects to eliminate REC requirements. Energy Trust involvement in the REC market is not central to our mission and is creating complexities in our broader policy work around greenhouse gases and community energy. Is that a dynamic that should exist? With regards to equity and inclusion, the policy is potentially positioned to harm environmental justice communities. We want environmental benefits to be retained within those communities.

Jaimes Valdez: An additional criticism is that the REC policy is violated all the time, so is not serving its original purpose. Double claims are frequently made by residential and commercial customers. Nobody announces in year six that their solar system is not greening up their energy anymore. Nobody announces when the RECs are transferred. The option for municipalities having to re-purchase RECs that are owned by a city seems strange. We should liberate Energy Trust from that role of having to manage RECs.

Oriana Magnera for group four: While we didn't arrive at specific answers, we asked a lot of questions about the value of RECs. Based on our discussion, we're leaning toward a view that the policy is not accomplishing its intentions and is creating barriers for developers, municipalities (because solar systems can't claim benefits) and environmental justice. We also had a caution from the OPUC that RECS do provide a small benefit for ratepayers and we should consider what replaces that value if we change this. Anna Kim suggested that if Energy Trust is no longer tracking RECs, those resources could be put elsewhere, and Energy Trust should define that value to ratepayers.

Jaimes Valdez: There is still a REC impact value to investments made by Energy Trust by generation, reduced load and obligation of utilities to purchase RECs. There is still an RPS impact even if RECs are held by customers.

Erik Andersen: For qualifying facilities, we're giving something back they can then sell.

Jed stated that staff have gathered this feedback to provide to the board policy committee to inform their work in looking at this policy. This might be the first of a few Renewable Energy Advisory Council conversations that will be relayed to the board.

#### 5. Public comment

There was no public comment.

#### 6. Adjourn

The meeting adjourned at 11:55 a.m. The next scheduled meeting of the Renewable Energy Advisory Council will be Friday, October 12, 2018.